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LECTURES ON CHEMISTRY,

BY

PROFESSOR BRANDE.

Delivered at the Royal Institution of Great Britain.

LECTURE XLIII.

On Silica, Alumina, Glass, Pottery, and Porcelain.

You see, Gentlemen, from what I stated to you, that *silica* is scarcely soluble in the acids, and that it does not form a regular class of salts, and therefore you may perhaps say, that it is scarcely entitled to the term earthy body, by which we generally understand a salifiable base; but you will find that it possesses an intense power of combination with different substances, but particularly the metallic oxides, with soda, potassa, baryta, strontia, and many of their compounds, constituting numerous natural combinations with these bodies. It is right you should be aware, that silica may be precipitated from its solution in water with potash, by muriatic acid, and here you have such a solution, (pouring into it, at the same time, some muriatic acid, which caused a slight precipitation;) and this indeed shows the fact which I wish to advert to, namely, that although it is said to be insoluble in the acids, it is not altogether so; for you observe, that when precipitated, it is again taken up by excess of acid. It happens, too, that when silica is precipitated, it falls down in a glutinous state, as you may here remark (pointing to the vessel); and, in this state, it will dissolve in considerable quantities in water; so that it is no uncommon thing to find mineral waters with silica in solution. When we talk of the insolubility of silica, we talk of it in its common state; but when once collected and dried, we should in vain attempt to get it dissolved in these media; whilst recently obtained, however, it dissolves in water, and in acids, and, in short, is a tolerably soluble body.

Scheele made a curious discovery of the combination of *fluoric acid* with silica, which acts powerfully upon it, and the result is a gaseous compound. He distilled a quantity of fluor spar, sulphuric acid, and silica together, by which he obtained a gaseous product; and he found, that during the production of the hydrofluoric acid, by the action of the sulphuric acid upon the fluor spar, the retort, which was of glass, was eaten into holes and destroyed. Later inquiries have taught us, that a very curious change takes place in this experiment, with regard to the silica and fluoric acid; and that a gas comes over, to which the term *silicated fluoric acid gas* has been applied. It is colourless, very heavy, and fumes upon exposure to air; and you will remark, that if you distil the mixture, and receive the gas in water, it will be decomposed as it comes into contact with the water; a quantity of silica will be deposited, and a quantity of fluoric acid holding in solution in the water another portion of silica, for the silica always retains some fluoric acid adhering to it. Now the theory of the production of the silicated fluoric acid, will be evident to you; you have silica and hydrofluoric acid acting upon each other; the hydrofluoric acid contains, of course, fluoric acid, and the silica its base silicium, which unite to form the silicated fluoric, or fluo-silicic acid gas; whilst the hydrogen of the hydrofluoric acid, and the oxygen of the silica, combine to form water, and this is the manner in which it is obtained. You observe that the bubbles of gas (directing the attention of the class to the retort in which it was distilling) fume like muriatic acid gas, on their exposure to air; this is owing to the decomposition of the hydrofluoric acid. If we now bring it into contact with water, you will see the decomposition I have adverted to; each bubble of gas, as it comes over, is coated with a film of silica; and, in making this experiment for the first time, Scheele thought that he had made silica, but, of course, its source was afterwards determined; in this way silica may be obtained in a state of very fine division, and considerable purity.

If I act at once upon fluor spar, by ap-

plying gentle heat to a mixture of sulphuric acid and spar, I shall, as you have formerly seen, liberate hydrofluoric acid; and as this acid has a strong attraction for silica, which forms a principal ingredient in glass, it has been proposed to etch upon glass with this acid, by covering the glass with wax, and scratching the figures you wish upon it with a blunt graver. I have seen plate-glass etched upon in this way with hydrofluoric acid, and impressions taken in the manner of a copper-plate engraving.

We next proceed to *alumina*. Now alumina is the base of alum; and if we know little of silica, we know but less respecting the nature of the base of alumina; but that it is a metallic oxide is probable, from the circumstance, that when potassium is heated with the alumina, potassa is formed, and a black matter thrown off.

To obtain pure alumina, dissolve alum in water, and precipitate it, by adding carbonate of ammonia, when a very bulky white precipitate falls, which is alumina in combination with water; if you dry it in this state, you will find that it forms a sort of vitreous greyish substance, which is a hydrate of alumina, composed of equal parts of pure alumina and water, which is separated from it with difficulty at a red heat. It is, at present, considered as a metallic oxide. With regard to the number of alumina, that is a matter upon which chemists widely differ; I have adopted eighteen, which agrees pretty closely with the later experiments of Dr. Thomson, and differs from that assigned to it by Berzelius, and indeed by Dr. Thomson himself, in his former experiments. So that, if we take eighteen as the equivalent of dry alumina, and eight as the equivalent of one proportion of water, we shall have twenty-six as the equivalent of the hydrate of alumina.

Now alumina is soluble in soda and potash, and imperfectly soluble in ammonia; it does not dissolve in the carbonated alkalies. It dissolves so readily in potash, that we often avail ourselves of it to separate alumina from other earths, as from lime and magnesia, which are insoluble in potash. Now all these are matters which I can only briefly advert to here, but they are of the utmost importance in analytical chemistry; and if you are not acquainted with all the little oddities and peculiarities of these and other substances, you will be unable to effect those delicate separations, which are indispensable in minute analytical investigations. Alumina derives one of its leading points of importance, from being the base of alum. Now *alum* is a salt which crystallises in octaëdral prisms, and is a triple salt, compounded of alumina, potash, and sulphuric acid. How these are combined, chemists have not yet exactly agreed upon; I shall show you, however, Mr. Phillips' table, representing the composition of alum, which he considers to be composed of, the bisulphate of potash, sulphate of alumina, and water: and that, in its crystalline state, it is composed of one proportional of bisulphate of potassa, two proportionals of sulphate of alumina, and twenty-two of water. When exposed to the action of heat, it loses a considerable quantity of its water of crystallisation, which is very great; it becomes light and spongy, and is known in pharmacy under the name of *burnt alum*. If exposed to a bright red heat, it loses a portion of its acid; but you cannot drive off the whole of the acid from it, by any known temperature. If, instead of decomposing alum alone, you heat it with charcoal, some curious things happen; and, among others, there is the production of a spontaneously inflammable body discovered by Homberg, and which he called *pyrophorus*. If you take alum and honey, or sugar, and heat them over a fire until they form a dry mass, reduce it to powder, put it into a phial coated with clay, and then expose it to a red heat in a crucible of sand, you will see a blue flame appear at the mouth of the phial. When it begins to burn dimly, you check the process, allow the phial to cool, and stop it up, so that the air cannot get admission. If your experiment succeed, you will have a black powder produced, which will inflame spontaneously on exposure to air. Sir Humphrey Davy has shown, that all that we have done here, is to decompose the potassa contained in the alum by the charcoal, and that, when the mixture is exposed to a damp air, the potassium attracts moisture with such avidity, as to ignite the charcoal. [Mr. Brande then exposed some pyrophorus on paper to the air, but it did not ignite, which led him to remark that he did not know how it happened, but that, of late, they had seldom been successful in their manufacture of it.] It has been found, also, that this substance takes fire when thrown into water. You see that it rapidly decomposes the water, owing to the presence of potassium. We find the water alkaline; and there is, therefore, no difficulty in accounting for the ignition of the compound, namely, by the presence of potassium.

Alum is a salt of great use in the arts, principally and chiefly as a dyeing material. I have already adverted to the fact, that colouring materials, of different kinds, have a strong attraction for aluminous earth; and that aluminous earth is luckily enough gifted with the property of having a strong attraction for vegetable fibres. It is upon this circumstance that the art of dyeing and calico-printing depends, and the principles of that art will be pointed out to you in a few mornings.

Alumina derives considerable importance from its being the only earth constituting the essential ingredient in *pottery*. I do not mean to say that it is the chief substance of which earthenware is composed, but that it gives to pottery its plastic character; so that when you wish to mould any substance into form, you are obliged to use alumina in consequence of its plasticity. Now the remaining short time we have, I shall apply to the description of the manufacture of *pottery*, *porcelain*, and *glass*, but only very briefly.

I might mention, however, previously, that there are a few metals which I have not noticed, as *zirconium*, *glucinum*, and *yttrium*; they are, however, of little importance, and it is not necessary I should point out their history, and I may refer you to books for the purpose. *Zirconium* has been found in the zircons or *jargon* of Ceylon; *glucinum* was discovered by Vauquelin in the emerald and beryl; yttrium in a metal, when it was combined with columbium, by Berzelius. A substance called *thorinum*, which had been placed by Berzelius upon the list of metals, has been since withdrawn, he having been mistaken as to its peculiar nature.

In taking a general view of the manufacture of *glass*, it becomes a first question, what are its essential component parts? The answer seems to be, silicious earth and an alkali. Now silica, employed in the manufacture of glass, is of various degrees of purity; fine white sand of different kinds is frequently employed in this country; flints, and white silicious pebbles, found commonly in the bottom of many rivers. In order to prepare the silica for the manufactory, it is calcined and pulverised. The sand of Lynn on the coast of Norfolk, and the sand on the southern coast near the Needles, is very white and pure, and is generally selected for the purpose. The alkali used for the best glass is *pearl-ash*, but rougher alkalies are employed for common glass. When pearl-ash and silica are mixed together, and exposed to a strong heat, the silica acts upon the alkali, combines with it, and a kind of imperfect and difficultly fusible glass is obtained; it becomes necessary, therefore, to add some substance to it which shall improve its fusibility, and not alter its characters of transparency and insolubility, and the substance most commonly selected for this purpose is the oxide of lead; litharge, finely powdered, is employed, and you may consider our glass to be composed of potash, oxide of lead, and silica; these may be said to be its essential ingredients. The lead very much increases the tenacity and fusibility of the glass, and confers on it great advantages, especially in regard to its refractive power, for which our glass is celebrated, and enables it to bear sudden changes of temperature. But the lead confers on the glass some disadvantages, one of which is, that it makes it soft, and liable to be scratched; another quality which lead confers is, to make the glass more fusible, so that if the chemist wishes to fuse any thing in a glass vessel, he cannot employ that kind of glass in which lead is an ingredient; it begins to soften at a red heat, and melts at a little beyond that temperature, so that he is obliged to use a Florence flask, or green bottle glass, which do not contain lead. At the same time, this very circumstance of its becoming more fusible, gives it value, since it enables the manufacturer to work the glass without much difficulty. Thus are silica, oxide of lead, and pearl-ash, mixed together in pots, and gradually heated, by which a quantity of water, of carbonic acid, and other impurities are driven off, and they enter into an imperfect combination called the *fritt*. It is then put into the glass pots, where it enters into fusion; a quantity of scum arises, which is taken off, and some impurities go to the bottom. When the whole is become clean, the glass-maker stops the current of hot air which has been playing round the pot, by shutting the damper, and the mass is then allowed to cool gradually down to the temperature required for working. It is then a very plastic material, capable of being welded, of being twisted and turned into a great variety of shapes; of being blown out into globular and other forms, by means of an iron tube, and so on. Here is a model of a glass-house, by which you will observe that it is a dome-shaped furnace, built on arches, through which there is a free draught of air. A row of pots is placed round the furnace, and there are generally six in number, entirely closed, except on the side where there is an orifice opening into a recess in which the workman stands. There is a short chimney to each furnace, in which is a damper, by the management of which the current of air is admitted or shut out, as may be required. These furnaces are generally kept continually in use, and the greatest care is therefore necessary in their construction, especially in the construction of the pots, which have not only to resist a long continued heat, but the action of ingredients, which tend to accelerate their fusion or vitrification; they are, therefore, made almost entirely of pure clay. The whole of the smoke from the fires around the pots enters the dome, and is carried off in the usual way. A number of other substances are sometimes added to the glass during the process of melting; if any colouring matter should accidentally have got into the glass, the oxide of manganese is added to remove it, called in the house a *snip*; especially employed to get rid of the

green tinge which is apt to arise from an impure alkali. If too much manganese should have been used, it gives the glass a purple tinge, which may be again removed, by putting a piece of wood into the glass pot. The glass having been blown or modelled into the required shape, is then put into a separate furnace, and allowed to cool very gradually; for if allowed to cool rapidly, it would be so brittle, that it would break upon the slightest touch; it would fly or crack to pieces, arising from an imperfect crystallising process, which takes place under such circumstances. This gradual cooling is called the *annealing* of glass, and the fact of the extreme brittleness of unannealed glass is shown in what are called Prince Rupert's drops, in which the particles of glass are in a state of irregular mechanical arrangement, so that, if you break off a bit of any part of it, or jar it, the whole will crumble into powder; but you may grind it down gradually without any such effect. Whereas if the drops be heated, and allowed to cool slowly, their brittleness is lost. The imperfect explanation offered of this phenomenon, has given rise to some lines in Hudibras, in derision of the philosophers who could not account for the bursting of a bubble of glass. Here are some little phials, called in the glass-houses *proofs*, they are made of unannealed glass, and will break with the slightest scratch, but will bear a considerable pressure or blow without giving way. [Mr. Brande then let fall a small bit of quartz into one of the proofs, and in a few minutes it gave way.] There are some curious properties about glass, which seem to depend upon its mechanical condition. You should never clean a glass tube with a piece of wire, which generally causes it to break, but with a piece of wood, or with hair.

There is a mixture of glass different from that pointed out, which is *plate glass*, and which is obtained by a very curious operation:—A mass of very pure glass, having been brought into perfect fusion, is rolled out upon a hot copper plate, and passed between it and a roller, until it has acquired the necessary thickness; it then has to be very carefully annealed, and afterwards to be thoroughly polished by grinding with sand, emery, and colcothar. This causes plate glass to be very expensive, especially when large. You see, too, the great necessity not only of a perfect admixture of the materials, but of perfect fusion, and so on; it must be as uniform as possible in its texture, without specks, or bubbles, or waves, and its surface perfectly plane. Then, in order to convert this into mirrors is the simplest operation imaginable; you have only to spread it over with some tinfoil, which is made to adhere to the glass, and to spread some quicksilver upon the tinfoil, which should be rubbed over with a soft material, such as a hare's foot, until the quicksilver and the tinfoil are amalgamated. If the silvering be not very pure, it will be seen by dark-coloured spots, which soon begin to appear upon the surface of the mirror.

A beautiful part of the manufacture is that which relates to the *colouring of glass*, and I am surprised that this art is not brought to greater perfection than it is, considering the richness of the effect and the great cheapness of the materials. Almost, indeed, I may say all, the colouring materials are mineral oxides; blues of beautiful shades are obtained from the oxide of cobalt; greens, the richer and finer greens, from the oxide of copper; purple, in all its tints, is afforded by the oxide of manganese; the preparation of gold, called the purple of Cassius, gives a rich deep purple; yellow is obtained from the oxides of silver and antimony; and, in this way, there is no difficulty in obtaining from the metals almost any colouring that may be required, at a cheap rate. There is a manner of colouring glass superficially, by painting it with different materials, which afterwards become vitrified on exposure to heat; in this case the colours are burnt in, as it is termed.

The manufacture of *artificial gems* is a branch of glass-making, and some of them are so exceedingly beautiful, that, unless you were allowed to examine them, as to their specific gravity, and so on, it would be impossible to discover them from the real gems. The diamond and the opal have never yet been imitated. The great art is, to have the oxides, used for giving the tints, of great purity, and to select a very pure glass with a high refracting power. *White enamel* is glass coloured by oxide of tin, which may be made of any degree of whiteness, up to a milky white.

In the manufacture of *pottery*, clay is of great importance; and under this term is comprehended a variety of mixtures of silica and alumina, and it is this which gives plasticity to the materials. Here is a specimen of Cornish clay, which is very white, and well fitted for the purpose; it is the produce of the decomposition of granite. Here is some Devonshire clay also, very good; but you are not to imagine that all clays which look white are fitted for the manufacture of pottery, for some which look very white become brown on burning. This clay is composed of silica and alumen, and is that generally selected for the fine pottery ware; coarser clay is employed for other purposes. Pipe-clay is a very fusible clay, so that if the pipe-maker should allow his batch to become too hot in the kiln, the pipes begin to bend, and to get crooked and

spoiled. Common clay and sand are used for the manufacture of bricks, upon which subject one might very well give an interesting lecture; as on the quality of the materials to be used; the manner in which they act upon each other; the several means resorted to by which the mass of bricks is heated, and the changes they undergo in that process. I must limit my observations, however, to a most important branch of pottery, namely, the *Staffordshire ware*, which is an artificial mixture of alumina and silica. In the first place, the clay, and that usually selected is the Cornish clay, is made into a thinish cream, with water, and the flint having been heated red hot, and quenched in water, is ground into a powder, and made into a cream with water also, the proper portions of these two creams are put by measure into a large tank, kept in a constant state of agitation, in a heated state, by which a certain quantity of the water evaporates, and the materials are brought to a proper consistency. The mixture is then brought in a plastic state to the potter's wheel, which is merely a common piece of wood, revolving horizontally on its axis, which, on being put into motion, the clay is moulded by the potter into all those beautiful varieties of form in which it is ultimately submitted to our use. All the shallow open vessels are fashioned in this way, and if it be required to finish them very neatly, they are fitted on what is called a *chuck*, and put into a lathe, when the exterior is turned and finished in a better way than could be otherwise effected, an improvement introduced into the manufacture of pottery by Mr. Wedgwood. It is then, by a little dexterous management, taken off the lathe, and allowed to become partially dry; the different articles are then packed up in earthy boxes, called *seggars*, which are ranged in a kiln, leaving proper space for the fuel, and kept red hot for a considerable time. The ware, when thus burned, is called *biscuit*; it is very porous; it allows water to pass readily through it, to prevent which it is painted over with a vitreous coating; the oxide of lead is usually employed; which, on being again submitted to the fire, melts into a sort of glass and renders the ware water-proof; it is then ready for use; and so much for the manufacture of common pottery.

With regard to the *painting upon pottery*, all this sort of work is done by transferring to the ware, whilst in a state of biscuit, the impression of any engraving stamped upon paper. The blue colour seen in the common blue and white ware is obtained from the oxide of cobalt; oxide of lead and borax are also sometimes used; the pattern adheres permanently to the surface of the ware when heat is applied, and in this manner very elegant and cheap patterns may be obtained without any labour of painting, as is bestowed on the finer sorts of porcelain, or China, as it is called, in consequence of the perfection in which it is, or rather was, manufactured in that country.

Here, however, a variety of difficulties present themselves to the manufacturer.—The manufacture of *porcelain* is altogether a thing of great nicety; the materials must be selected with the greatest care, it being necessary that the resulting compound should remain perfectly white after exposure to heat, and that it should have a semivitreous texture, a certain degree of translucency, and bear a high temperature without fusing. Such properties will be generally found to be possessed by the old china cups, in the cabinets of the curious. They will bear great changes of temperature without cracking, and great heat without fusing, and retain their whiteness; these are requisites seldom found. If you examine the china of Sivres, you will see that it is very white, very delicate, but still it will not bear a great heat without fusing. Some of our china is very white and delicate, but retains great fusibility, approaching more to the character of glass than porcelain: you do not get a combination of the translucency and infusibility, the characteristics of good porcelain. The figures which you see on porcelain are painted on the ware whilst in a state of biscuit, and the colours are afforded by metallic oxides, which are brought out on the application of heat, and as many of the substances employed undergo great change of colour after having been heated; you see that great experience is required in their selection. Now the colours, which require a high temperature to bring them out, are laid on first, and then such as require a less temperature, and several burnings are necessary before the colouring is completed.

Now, having given you a general outline of the art of porcelain painting, you may suppose how great are the difficulties of *enamel painting*, in which the painter is obliged to copy the most delicate and beautiful drawings, and that in miniature. A piece of copper is coated with enamel, and on this the colours are laid, the execution of which requires the greatest tact and skilfulness; the risk of discoloration is very great, and if one colour should fail, the whole piece would be spoiled; and notwithstanding this, the enamel has probably to be passed through the fire twenty or thirty times; there is the great danger also of cracking the enamel, by which all the previous labour would be lost; indeed, I never look at an enamel painting without admiring the great skill of some of our artists, and the perfection to which the process is brought.

This concludes the part of the course relating to the metals, and to their combinations. In the next lecture the subject of vegetable chemistry will be commenced.

FOREIGN DEPARTMENT.

ON THE EXISTENCE OF SULPHUR IN ASAFŒTIDA.*

If liquid potass be added to asafœtida, and an acid be placed in the solution, an effervescence takes place, and a gas escapes, which colours paper tinged with the acetate of lead, in the same way as sulphuretted hydrogen does. If a solution of asafœtida be made in alcohol, and after being evaporated to dryness, be poured on the residuum and hydrochloric nitric acid, a liquid is obtained, which contains sulphuric acid; lastly, if the volatile oil of asafœtida be burned in a state of purity, a very strong odour of sulphurous acid is given off. If the same oil be heated with potass, until it nearly burns, it leaves a mixture of carbon and sulphuret of potass.

ON THE HEART.†

In a paper contained in the Journal General, M. Gendril has noticed in detail, the different malformations of the heart; the principal of which are the unusual communications of the cardiac cavities, by the absence of the inter-ventricular septum; the irregularity of the vascular orifices of the heart, for instance, the transposition of the aortic orifice to the right ventricle, the contraction or even obliteration of the pulmonary artery, and the substitution of an impervious trunk. From the similarity of these different malformations, M. Gendril concludes,

1st. That the heart, originally, is formed of a single cavity.

2nd. That afterwards this organ is divided into two cavities, an auricle and a ventricle.

3d. That, at a more advanced period, these two cavities are themselves divided each into two others, which, however, communicate for a long time after, by the imperfection of their septa. To these indisputable facts, the author submits the following opinions.

The pulmonary arteries arise at first from the aorta, by means of the arterial canal; it is only at a later period that the trunk of the pulmonary artery is formed, and opens into the heart from without inwards, by a mechanical impulse à tergo.

When the pulmonary artery opens into the ventricle, the communication between the ventricular cavities is then, for the first time, closed. The pulmonary veins open originally into the superior vena cava.

By the development of the superior part of the auricle, which is affected at the expense of the lower part of this vein, the pulmonary veins reach the auricle, and it is at this period that the formation of the auriculo-ventricular septum commences. Whatever may be the varieties of the malformation of the heart, they are nevertheless subjected to certain invariable rules, dependent on the regular and constant succession of the changes which are affected in this organ.

The aorta, or pulmonary arteries, never open into the auricles; the venæ cavæ, or pulmonary veins, never open into the ventricles; neither the right auricle, nor the left ventricle, are wanting, if there be more than one cavity. The pulmonary veins never open into the ascending vena cava, nor into the aorta; the pulmonary arteries never open into the venæ cavæ.

If there be any imperfection in the inter-ventricular septum, it is always at its superior part towards the base of the heart, and never at its inferior part towards the apex. When the orifice of the pulmonary artery does not exist, or only exists imperfectly, the ductus arteriosus is never obliterated; this is also the case when the aortic orifice is not free; but, in this case, the orifice of the pulmonary artery is constantly present. When the orifice of the aorta, or that of the pulmonary artery, is completely obliterated, there always exists an opening in the inter-ventricular septum. When the pulmonary artery is imperfect, it is always on the side of its orifice, and never towards its continuity, with the ductus arteriosus.

If the ductus arteriosus is obliterated at its origin, the aorta and pulmonary arteries are always perfect, and open into the same ventricle; or if they open into different ventricles, there is a communication between these cavities across the septum which separates them.

INTERMITTENT FEVER ATTACKING THE VERTICAL HALF OF THE BODY.*

Madame B., twenty-two years of age, of a sanguineous temperament, and vigorous constitution, had always enjoyed good health. She suckled her child up to the tenth month, and was in very good health, until seized, without any known cause, with a shivering, which was soon succeeded by heat and pain in the head, occupying, however, only the left half of the head and face. Some

* Journal des Progrès.

† Journ. Gen.

* Ephemerid. Med. de Montpellier. 1827.

hours after, all these symptoms disappeared, and a perspiration appeared in all the corresponding part of the body. The next day, at the same hour, a fresh attack came on, but much severer, and went through the same gradations as on the preceding day. The physician, M. Lassalvy, was present, when the third paroxysm came on. The shivering, the heat, the perspiration, were confined to one half of the body. Paroxysms of this kind continuing, the sulphate of quinine was administered with complete success.

Similar cases are to be found on record. M. Duval (*Observ. Medico-Chirurgic.*) saw, in the military hospital of Brussels, a soldier, who was attacked with a quarta fever, which presented a remarkable anomaly. The cold fits, which lasted nearly two hours, were accompanied with a violent spasmodic contraction of the whole muscular system of the perpendicular half of the body. This contraction, more sensible in the eyes and face, gave to the patient a hideous appearance. Those parts, which had been attacked during one paroxysm, were not in the next, so that each half of the body was attacked in its turn. There is an instance of a man, who, after sleeping in a chamber recently washed out, was attacked with an intermittent fever, the effects of which were observable only on that side of the body, which was opposed to the wall where he slept.—*Revue Medicale.*

Mangold relates the history of a quarta fever combined with hemaplegia, perspiration, convulsions, all of which symptoms would sometimes show themselves in one, and at other times in the other part of the body.—*Mangold Erfurt.* 1766.

M. D'Auxiron saw an intermittent fever attacking the body horizontally,—that is to say, affecting only the lower half of the body.—*Journ. de Med.*, t. xxiv. p. 60. Jan. 1766.

Van Swieten and Lainèthrie have both seen a young lady attacked with catalepsy on one side only.—*Comment. in Herman. Boërr.*

We find in Morgagni, an example of icterus coming on in an old man labouring under hemaplegia of the right side, after being attacked with apoplexy.—*De sedibus et causis morborum.*

Etmuller, Paulinus, Pechlin, Plenck, Berger, Robert, relate similar or analogous facts. Erhard, of Strasbourg, has perspired, during his whole life, on the right side only; in fact it is not rare to observe curious cases of this description.

LONDON MEDICAL SOCIETY.

May 26, 1828.

Dr. Haslam, President, in the Chair.

(*Last Meeting for the present Session.*)

OPERATIONS ON THE VASA DEFERENTIA.—NEW INSTRUMENT FOR TRANSFUSION.—MR. HOLMES'S MIDWIFERY INSTRUMENTS.

After the reading of the minutes of the former evening, Mr. Pearson, of Clapham, made some observations on the proposition of dividing the vasa deferentia in lieu of castration. He said, that in the year 1814, he had performed the operation alluded to, upon an old stallion; the result was, that the testes wasted, and the animal entirely lost his sexual appetency, at the same time losing many of the external physical characters of the male. Since this operation was performed, he had submitted two young asses to a similar procedure, and the results were the same.

The President remarked, that Baron Larrey in his Memoirs, had spoken of a wasting of the testes, following the use of brandy made from dates. He wished to learn from Mr. Pearson, who appeared to be conversant with the diseases of animals, whether they were subject to any disease which was analogous to gout—to the podagra of the human subject. In reading a very old author, Vegetius, he had lately met with a most remarkable passage; it was as follows: "*De podagra jumentorum. Si nihil profecerit castretur et vitio carebit nam podagra raro vexat eunuchos.*"

Mr. Pearson remarked, it was a fact noticed by various writers, that eunuchs are not affected with gout; he had no doubt that venery was a strong predisposing cause.

Mr. Proctor could not subscribe to the opinion of gout being connected with venereal excitement, having lately attended a lady afflicted with this disease, who was upwards of 70 years of age.

The conversation on the foregoing subject being ended, Mr. Waller submitted to the notice of the Society an instrument invented by Mr. Lloyd, of King Street, Borough, for the purpose of transfusion. The principal defect in the instruments hitherto used, Mr. Waller remarked, consisted in the manner in which the blood was received. In the present instrument a funnel was attached to the body of the syringe, into which the blood was at once received, then, by simply turning a cock with a spring, the communication between the funnel and syringe was cut off, and the blood already in the latter

can be forced onward into the vein as usual.

Mr. Holmes's midwifery instruments constituted the next theme for discussion.* The *short forceps* which Mr. Holmes has invented, are straight, and one very important deviation from the forceps ordinarily employed is, that the fenestræ are very small, consequently admitting of but a very slight portion of the head of the fœtus to pass through. In the *perforator*, the improvement consists in its being so constructed, that having been introduced into the cranium of the fœtus, the instrument is opened by pressing the handles together, in lieu of the ordinary method of pulling them open. The *craniotomy forceps* differ from those commonly used, in being large and very strong, in having on one blade three large spikes or dentiform processes, (Dr. Blundell compares them to the incisors of a rabbit,) and on the other blade three cavities in apposition with the scalpriform teeth; so that the danger of the instrument slipping is most effectually and completely guarded against.—These instruments are united by a joint, which, at the same time that it prevents the soft parts of the mother from becoming entangled, affords a powerful leverage to the operator. The instrument invented by Mr. Holmes for rupturing the membranes, consists of a long canula, in which is a stilette, and the latter is pushed forward by means of a spring at the bottom of the handle.

The size of the fenestræ was held as an objection to Mr. Holmes' short forceps, by Mr. Field, and Mr. Howell, on the principle of the large fenestræ admitting of a portion of each parietal bone to pass through, and thus taking off undue pressure from the head of the fœtus; but, on the other hand, it was contended by Mr. Amesbury and Mr. Lambert, that uniform pressure is produced by an instrument which envelops the whole of the head, in the manner of Mr. Holmes' forceps, and that with the forceps having large fenestræ, and consequently narrow and sharp rims, partial and injurious pressure is occasioned. Mr. Waller said, that he thought one defect in Mr. Holmes' forceps was in the lock, which would not close, except both the blades were exactly opposed to each other. Mr. Waller said also, that he considered it would be an improvement in the craniotomy forceps if the blades were separate. On this latter point, however, Mr. Holmes observed, that if the blades were better separate, he could claim no merit over Dr. Davis, who had already separated them; "But," said he, "if Mr. Waller makes the union of his separate blades at the point where I have made my joint, he will endanger the soft parts of the mother; if he makes that union nearer the handles, he will lose that purchase which is so essential to the safety of the instrument."

In the course of the evening, Mr. Callaway exhibited two biliary calculi, each of the size of a hazel nut. The patient, a woman 49 years of age, had a tumour in the right hypochondrium which eventually "maturated;" ill-conditioned pus, mingled with bilious matter, was discharged, and shortly afterwards one of the calculi. A fortnight, subsequently, the second calculus was discharged; the wound eventually healed, and the patient did well. She was under the care of Mr. Ravis, of Union Street, Borough.

At the conclusion of business, the President briefly addressed the Society, informing the members that the meetings for the present session were now terminated. He warmly congratulated the Society on its increased strength, not only numerically, but in respect to its accession of talent and importance, and although, undoubtedly, the exertions of the members had materially conduced to this state of things, yet it was to the Medical Press they owed most obligation. By the reports of the proceedings of the Society in The Lancet, circulated most extensively throughout the kingdom, the reputation of the Society had been enhanced to an unprecedented degree; the members owed their warmest obligations to the press, and, indeed, many of them had informed him that such was their feeling.

The worthy Doctor left the chair amidst loud applause.

The society will resume its meetings on the last Monday in September.

* The large gold medal of the Society of Arts was presented to Mr. Holmes, on Monday last, for the instruments in question.

THE APOTHECARIES' ACT, ITS INJUSTICE TO SURGEONS.

To the Editor of The Lancet.

Sir,—As a surgeon of many years standing, I feel called on to assume, however incompetent I may be to the task of legal disputation, the advocacy of the interests and honour of my professional brethren, and therefore take leave to address myself to you, as a public journalist, judging from what I have hitherto read in your columns, that you will admit an insertion of the few observations which, on public grounds, I have to make on a recent decision in the Court of Common Pleas; I allude to the case of "*Allison* v. *Haydon*," reported in the

"*Observer*" of Sunday the 11th instant. In the report therein given, it is stated the plaintiff, a member of the College of Surgeons, having previously brought his action for compensation for his trouble and attendance on the defendant, under a case of typhus fever, suffered a nonsuit, on the bare ground that he had not been *admitted a "member of the Apothecaries' Company."* No want of *skill* or *neglect* having been *set up* as part of the defence. The plaintiff now applied to the Court to set aside the *nonsuit*, and grant a new trial. It seems the medicine supplied had been paid for,* but whether furnished by a druggist or the plaintiff, is not stated. The action, therefore, was purely to obtain a reasonable remuneration for the *skill* and *personal services* rendered to the defendant in his illness, and under which he recovered; in fact, in *legal phraseology*, his "*work* and *labour*, *care*, *diligence*, and *attendance*," unquestionably set forth in the declaration of his suit. The application proved abortive, the "*learned*" judge giving the following most extraordinary opinion on the clause of the "Apothecaries' Act," in this instance misunderstood, tortured, and misapplied, to the cruel injury of a man belonging, as the great Perceval said, to "one of the most useful, necessary, and elegant of the professions;" and to the degradation of the whole body of which he is an acknowledged and competent member.

The Lord Chief Justice said, "although he wished to do justice to every department of the medical profession, that it was a wise law which confined each class of the profession to its own particular business, and although there could be no doubt it was often the duty of a surgeon to prescribe for a patient upon whom it was necessary to perform an operation, yet, in the present case, the patient suffered from fever, which was more properly within the province of a physician, and he could not see the necessity to prescribe, and besides, he thought that, under the Act of 53 Geo. III., he, the plaintiff, could not recover; and he also thought, that a physician who prescribed for a patient, and afterwards provided the medicine, could not recover the amount of such medicine." This is deciding with a vengeance! Let us dissect the subject a little; first, then, I am not aware of any single act or statute in existence, which constitutes the "law," dividing and subdividing, according to this "dictum" of the Chief Justice, the profession into three or four distinct branches, each to be tied or restricted to the pursuit of "its own particular business." What would the numerous country population of Great Britain do, if compelled to obtain medical aid under such a system of regulation? What would become of the surgeon apothecaries of England, Scotland, and Wales, three fourths in number of the whole body? Are they all incompetent to practise in a two-fold capacity? or do the means of the bulk of the population enable it to procure at all times those separate and distinct attendants in their hour of need? I would say *no*, although it may suit the dignity of the worthy judge and his colleagues, to have and enjoy the parade of their several medical appendages! The monstrosity of such doctrine hardly needs a reply, it is too ridiculous, and proves these lawyers are totally ignorant of that basis, on which alone the science of physic can be built with safety, or preserved with honour; the foundation of which is laid in anatomy, as proved by the labours of the immortal Hunter and others, up to the present day. And yet the surgeon, who is no surgeon without a knowledge of anatomy, is to be pronounced incapable of treating a febrile disease, perhaps arising from a surgical cause, although he may "prescribe" for, and be permitted to "prepare" his patient for an "operation, hazarding life, and requiring, frequently, a judicious course of medical treatment for several weeks, and exercise of the greatest skill in the after management, to rouse or preserve the powers of a sinking constitution!" Was there ever such an anomaly in reasoning, gratuitously delivered from the bench before? Oh, Mr. Abernethy, why have you, a surgeon and teacher of anatomy too, presumed to lecture on diseases of the digestive organs, or ventured to prescribe for their effects! But to be grave, as gravity best suits this subject, and the respect we owe to the deliberation of the judicial wig. Will the enlightened surgeons of this country, many of whom I venture to predict are not armed with the "commission" of the "Apothecaries' Company," rest quietly under such an insult offered to their learning, to their personal and professional honour. I would hope not; it is too monstrous to be passed over. A surgeon, regularly bred as such, (whatever his past experience may have been,) must be destitute of a legal remedy against any unprincipled person, who may choose to defy his honourable claim for services he may render in any case not *purely* surgical! That the discretion of the Chief Justice could have permitted, under a dubious clause of this act, a deviation from that course due to the feelings and fair claim of the plaintiff in this cause, is deeply to be lamented; the honour of both professions sustain an injury thereby, of lasting impression, for surely, in an equitable point of view, as it had not even been attempted to deny the plaintiff had performed his "work and labour" skilfully,

* Not so; the bill was for medicine and attendance.—Ed. L.

he was entitled on every other principle of British law, to be paid for it, or no man can fairly or legally sustain a claim for compensation for personal services done to or for another.

The ambiguous and ill-defined clauses of this Act for the "protection of the medical profession," are an opprobrium, if an acknowledged surgeon is condemned by its authority to live, or rather starve, by restriction to the use of his scalpel and adhesive plaster, for such is literally the case. It is proper, for the information of those who are not, perhaps, in possession of a copy of this "notable statute" obtained by the "Company of Apothecaries," briefly to point out its evils.* Towards the gentlemen of that community, individually, I cannot be supposed to entertain any hostility of feeling, but I assert fearlessly, that the act reflects every thing but honour and credit on those who passed it, under the imperfect manner in which its clauses were filled up, and which even the very judges do not seem to comprehend. Every fair friend to the sciences of medicine and surgery must perceive, that the undefined views and enactments so ambiguously held forth therein, have created the mischief in question, and would object "*in limine*" to the classification spoken of by the Chief Justice, because it has nothing whatever to do with the general principle of the bill, which originally was solely designed to exclude ignorant men and unqualified pretenders from practising in the medical profession; or, in the cramped terms of the act, in the "art and mystery" of an apothecary, i. e. in days gone by, purely the physician's dispenser and attendant! But I also will assert, without fear of being disproved, that it never was passed designedly by the legislature to interfere either directly or indirectly in any way with the rights and privileges of either of our Colleges of Surgeons, the foundation of whose studies renders their members competent to the treatment of every variety of disease. Neither has that very act so quoted by his Lordship, any clause to compel those, over whom it assumes control, to become "members of the Apothecaries' Company," as asserted, as they only, as a Company, exercise a trading monopoly among a few persons, under some old grant or charter having formerly been united with the grocers, and that privilege, extending a short distance round the city of London, is confined to a few persons, who, to be free of the company, must be apprenticed therein. The clause of the Act, called "An Act for regulating the practice of Apothecaries in England and Wales," &c., enacts, that from and after the first day of August, 1815, persons who design to practise as apothecaries in England and Wales, shall obtain a certificate of their competency; but this regulation bore no allusion to surgeons, who, from the very nature of their education and pursuit, must be presumed competent to treat any disease of general occurrence, nor is it possible, (as every practical and well-informed man knows,) to draw that line of separation between diseases purely medical or purely surgical, to warrant the distinction, a distinction at variance with common sense, and injurious to the community! But in this very Act on which the decision is grounded, and of which I have had a copy since its passing into a law, there is a saving clause, certainly not very definite, exempting its interference with surgeons;* and yet the judges, from a hasty or incorrect view of the statute, at once pronounced against the plaintiff in the teeth of the exemption! Can any thing be more preposterous, presuming the report given to be correct? A judge in the nineteenth century deciding that a surgeon, an anatomist, having passed his examinations, and received his diploma from a chartered college of the first city in the empire, is not a competent person to prescribe for a fever; nor, even if he treat the case successfully, is he, according to the judgment of the Court, in the construction of the "Apothecaries' Act," entitled to be paid for it. Is it compatible with reason, that the former supporters of this Bill could have contemplated such an act of flagrant injustice? Certainly not. I do also maintain, that the original framers of the Act, among the first of whom, I believe, was Dr. Harrison, of Horncastle, had only in view the good of the public, and the respectability of the profession of medicine; the object to exclude uneducated men from tampering with human life, under the pangs of disease, and protect the sufferer from the designing and avaricious; and in this light, I trust, the respectable and more enlightened members of the Company of Apothecaries, still view the trust delegated to them by Parliament, not as a power to oppress, or to be applied to the degradation and injury of their coadjutors, in the pursuit of a science more valuable to mankind than any other, and who, by the law of the land, and under the protection of its constitution, exist as a learned body! Once more, I presume to maintain, the decision was contrary to the spirit of the Act in question, although its letter of imperfect definition and sweeping tendency, may have influenced

* The Apothecaries' Act was published in Number 108 of this Journal, p. 5—12. Ed. L.

* The author is not quite correct here, as we shall show on another occasion.—Ed. L.

it; but to whom shall we appeal, if those, from their station and office, who should afford our public character and private interests that protection we are entitled to, are the first to lessen the importance of our calling, and its absolute disconnection with the practice of medicine? To legislate in what cases a surgeon should prescribe in the present day, admits not an argument in its support; for, according to this "law," even a fever arising from local injury, may not be within his province to combat; and, again, many surgical diseases not requiring the "operation" limited by his Lordship to the surgeon's powers, may be considered unfit for his management! We must then address public opinion, and suffer not tacitly a stigma so derogatory to go abroad. What! the surgeons of Great Britain in the nineteenth century incompetent to prescribe for any case of simple disease, under the improved anatomical knowledge of its medical professors, and the advantages so many have derived from the late war! What would the medical men of Europe think of our submission? From what has transpired, it is but too evident the "Apothecaries' Act" exists as an instrument of oppression; as such, every surgeon qualified by his College, has a personal and vital interest in resisting its effects; the mischief is too palpable to pass long unnoticed. The honour and credit of the profession are involved; let them be upheld with becoming dignity and just resentment.

I am totally unknown to the gentleman more immediately interested, and hope his cause will be espoused by abler hands than those of him who now addresses you. I must plead in apology the importance of the subject, and my warmth of feeling, for the length of this letter. I am, Sir,

Your obedient humble servant,

CHIRURGICUS.

Blackfriars' Road, May 16, 1828.

Transactions of the Association of the Fellows and Licentiates of the King and Queen's College of Physicians in Ireland.—(Continued from page 219.)

On the Peripneumonia of Children.

DR. CUMING has given a very excellent paper on the peripneumonia of children, the substance of which we shall endeavour to lay before our readers. It seems somewhat extraordinary, that in Underwood's Treatise on the Diseases of Children, a work professedly systematic, an affection of such frequent occurrence as this should pass entirely unnoticed. Burns has concisely alluded to it, in the chapter in which he treats of catarrh and bronchitis. Dr. Hamilton speaks of a similar affection under the title of catarrhal fever; and Dr. Hastings, in his excellent Treatise on the Inflammation of the Mucous Membrane of the Lungs, has given a more extended description of the disease as his fourth variety of acute bronchitis. At the conclusion of his pathology of the mucous membrane of the larynx and trachea, Dr. Cheyne has published some admirable remarks upon what he styles the epidemic peripneumony of children. In the dissections given, by Hastings and Cheyne, the morbid appearances were chiefly confined to the lining membrane of the bronchi; whereas, in almost every fatal case of the affection which the author witnessed, the parenchymatous and mucous tissues seemed to have been equally the seat of inflammatory action. The disease occurs in children of all ages, from a few days old up to eight or nine years; but it most frequently attacks children between nine months and two years.

"In some instances it commences suddenly, and without any assignable cause. It has sometimes happened, that the child has gone to bed in perfect health, and risen next morning with all the symptoms of the disease distinctly marked. Such cases, however, are rare. In general a trifling cough, with other slight symptoms of catarrh, precedes, by a day or two, the complete formation of the disease. When fully formed, the symptoms, by which the disease is characterised, are a hurried, laborious, and wheezing respiration, a frequent, short, and dry cough, and a greater or less degree of fever. With the fever are combined an extreme degree of restlessness and impatience, moaning, starting out of sleep, and aversion to be moved. The countenance, though occasionally flushed, is, for the most part, extremely pallid, sometimes sallow; and as the disease advances, it frequently assumes a mottled livid hue, and becomes, in some cases, swollen and œdematous. When the progress of the malady cannot be stopped, the breathing amounts, in many cases, to a rattling. A state of drowsiness and prostration succeeds to the state of rest-

lessness and pervigilium, which had existed in the beginning; the cough is suspended, the pulse becomes imperceptible, the extremities cold, and, in the course of eight or ten days from the commencement of the attack, death generally takes place by suffocation. With regard to the respiration, the average natural frequency of which in an infant under twelve months, is about thirty in the minute; I have frequently observed it to be sixty, seventy-eight, eighty, ninety, and a hundred and two in the minute; and, in one case, that of a child six months old, I counted no fewer than one hundred and eighteen inspirations in the minute. When the respiration comes down from the frequency above mentioned, to fifty-four or forty-eight in the minute, it generally indicates that the disease will terminate in recovery. In some instances, there is an intermission of the breathing; that is, for three or four inspirations and expirations it will be of natural frequency, then for about the same number it will be double or triple this frequency, and then again it will become as slow as at first. Although, in almost every instance, as the disease advances towards a fatal termination, the breathing becomes more and more hurried; I have observed in one or two cases, in which in the beginning the respiration had been excessively hurried, that it fell to near the natural frequency a short time before death. In addition to its frequency, I have mentioned that the breathing is laborious. This state of the respiration is abundantly evident from the heaving of the chest, and the alternate dilatation and contraction of the alæ nasi, symptoms which are never absent when the breathing is much oppressed. In some instances, towards the close of the disease, the head is violently retracted, while the lower jaw is depressed at each inspiration, and the patient lies for a considerable time with his mouth open and gasping for breath, before death puts a period to his sufferings. The respiration, though generally wheezing, is not always so. In some, there is no wheezing at any period of the disease; and, in others, though the breathing is loud and audible, the sound seems to proceed rather from some impediment offered to the air in its passage through the nostrils, than from mucous accumulation in the bronchi. It is difficult, by description, to convey an accurate idea of the sound to which I allude. I would call it a *dry* sound, in contradistinction to the other, which may be termed *humid*. It seems to be owing to a straightening of the air-passages, occasioned by the inflammatory turgescence of the membrane by which they are lined. When secretion takes place, the turgescence is in a great degree removed; and then the sound, from being dry, becomes moist and wheezing. In some instances, the sound emitted in respiration seems to be a compound of the two sounds already mentioned, and to proceed partly from the nasal, and partly from the bronchial obstruction. In the great majority of instances, however, the sound is distinctly wheezing, varying in degree from that of simple crepitus, up to the loud and mucous rattle. The cough, which is generally short and dry, is, for the most part, frequent at the commencement, becomes less so as the disease advances, and towards the close it is occasionally suspended altogether. A return of the cough, after it has been for some time suspended, is always to be considered as a favourable symptom. In some instances, in which there is reason to suspect a complication with croup, the cough is suppressed; in others it is hoarse, stridulous, and ringing, and attended with shrill and crowing inspirations. In some cases, the cough seems to be attended with pain, as is indicated by the expression of the countenance, and the child's crying piteously whenever it makes a forced expiration. In infants on the breast, when expectoration takes place, unless the phlegm be rejected from the mouth along with the contents of the stomach, it is generally swallowed. In children, however, of more advanced age, expectoration takes place as in adults. In those, therefore, when the disease is on the decline, the cough becomes loose, and is attended with the rejection of mucus. I am not aware that there is any disease of childhood, which is attended with a higher degree of fever than the one I am now considering. Intense heat of skin, dryness of the lips and nostrils, loaded white tongue, excessive thirst, and a pulse from 168 to 200, have been present in many instances; and to these symptoms, as I have already mentioned, have been superadded restlessness and jactitation, with moaning and starting out of sleep. In some cases, the child can only be tranquilised by being carried about in the nurse's arms. As soon as he is laid on her knee, or in his cradle, the restlessness and crying will return, and continue until he is again put in motion. By merely looking at the child, I have frequently set him a-crying, and, in this way, have been prevented from ascertaining what I was most anxious about, the state of the respiration. In the commencement of the disease, the pulse is for the most part hard, and sometimes full; during its progress it becomes feeble, and towards the close it is generally imperceptible. By simply grasping the hand, I have often been able to ascertain the force and frequency of pulsation, a pulse being felt in every finger. In some instances, the fingers are constantly and impatiently thrust into the mouth, which is hot and dry; and as the fatal termination

approaches, its mucous membrane becomes more or less of a livid hue, corresponding with the lividity of the face. Though the stomach is occasionally irritable in the beginning of the disease, it is remarkable with what difficulty vomiting is excited towards the close. Indeed, so great is the insensibility of the stomach a short time before the fatal termination, that I have repeatedly administered the strongest emetic medicines, and in the largest quantities, without effect. This insensibility to the action of emetics, has also been observed in the advanced stages of croup;* and I believe the insensibility is not confined to the mucous surfaces, it extends, more or less, to every part of the body, but particularly to the skin, when we frequently fail in exciting inflammation by the application of a blister. In some cases, the bowels are obstinately confined; in others, there is diarrhœa, with thin, green, and slimy stools; the stools are occasionally lumpy and black, sometimes whitish. I have mentioned that the countenance, though, for the most part, pallid, becomes more or less of a livid hue, as the disease advances. The lividity is most remarkable in the lips and cheeks, but sometimes the palpebræ display a purplish arborescent appearance, and the veins of the forehead are tinged with blood."

Thus far, Dr. Cuming has described the symptoms in their progress to a fatal termination. When an opposite event takes place, and the disease terminates favourably, the cough becomes less frequent, the breathing less hurried, and wheezing; the fever subsides, the countenance resumes its healthy hue and expression, and a state of sound and refreshing sleep succeeds to the previous watchfulness and inquietude. With regard to the duration of the disease, when an unfavourable event takes place, it is generally upon the eighth or tenth day. When the case terminates favourably the disease is seldom prolonged beyond a week. Sometimes, after the acute symptoms have subsided, more or less cough, with wheezing respiration, will remain, and continue for weeks, the disease thus passing into the state of chronic bronchitis. The disease is most prevalent in the winter and spring, and it appeared to prevail as an epidemic amongst the children of the poor in Dublin in the winter of 1824. The disease is, in most instances, to be attributed to the application of cold or moisture, and in many cases it was evidently excited by the measles.

"The morbid appearance most frequently met with, is an increase in the solidity of the lung, varying in degree from that of the slightest sanguineous congestion, up to complete hepatisation. This increase of solidity is not equally great in every part of the lung; the inferior and posterior portion of the lung is, in general, the part principally affected; and it frequently happens that while the upper portion is in a healthy state, or merely a little more congested than natural, the inferior portion is completely hepatised. It would appear as if the morbid process, commencing in the lower part of the lung, had completed its course there, before the superior portion had advanced beyond the stage of sanguineous congestion. By hepatisation, I mean that state of the lung which is characterised by a purplish red colour externally, a bright red colour and granular appearance when the lung is incised, and a total absence of crepitus, the lung feeling firm and solid, and sinking in water. This state corresponds with the second degree of inflammation of the lung, as described by Laennec. The first degree of inflammation, according to the same author, is the state of sanguineous congestion abovementioned. Laennec's third degree of inflammation, or that which is characterised by a purulent infiltration of the lungs, I have not had an opportunity of observing. When the first degree of inflammation, or that of sanguineous congestion prevails, it is generally combined with more or less of serous effusion into the interlobular tissue of the lung; but where the lung is hepatised, its section appears dry and granular, and very little serous, or any other kind of effusion, escapes."

Besides the morbid appearances now described, there is, in almost every case, more or less inflammation of the mucous membrane of the bronchi, and in some cases the inflammation extends to the trachea, the mucous membrane of which is more vascular than natural, and smeared with a viscid mucus. The more intense the in-

* Speaking of croup, Dr. Cheyne remarks, the want of irritability, when the disease is far advanced, is sometimes so great, that I have known a child take six or eight grains of tartarised antimony, without vomiting.—*Pathology of the Membrane of the Larynx and Trachea*, p. 60.

flammation of the mucous membrane, and the more considerable the effusion into the bronchi, the less in general is the induration of the lung, and *vice versa*. The author is of opinion, that the foregoing affection is a combination of bronchitis with peripneumonia, or what, by some authors, has been called "a catarrhal peripneumony." From the appearances presented on dissection, it would appear that death, when it occurs, is to be attributed either to suffocation, occasioned by the accumulation of fluid in the bronchi, or to that indurated state of the substance of the lungs, by which they are rendered totally impermeable to the air. While the one effect is owing to the effusion of mucus or pus into the air-cells, the other seems to be the consequence of an effusion of lymph into the cellular membrane which connects the air-cells. It would seem, therefore, to follow, that in the treatment of this disease, the objects to be had in view are, therefore, 1st, To arrest the inflammation before it has proceeded to the length of effusion; 2dly, Where effusion has taken place, to prevent as much as possible its increase; 3dly, To adopt such measures as may tend to promote its absorption or expectoration.

"To accomplish the first object, the most powerful remedy we possess, is bloodletting; and provided the disease be seen at its very commencement, we may not infrequently extinguish it in its birth. In this early stage, the breathing is loud and distinctly audible; it is not wheezing, the former sound arising from the straitening of the air passages, occasioned by the turgid state of the mucous membrane. It rarely, however, happens that our assistance is required before a certain degree of effusion has taken place, as is evinced by the wheezing of the respiration. We can seldom, therefore, expect to conduct the disease to a favourable termination, except through the medium of a free expectoration, which is, indeed, the most usual way by which the inflammation of the bronchial membrane, or of the substance of the lungs, resolves itself. When effusion has taken place, provided it be not in excess, and the strength be but little reduced, it is to be considered a favourable symptom; and while we adopt measures for the promotion of its absorption or expectoration, we shall be most likely to prevent its further increase, by resolving, as soon as possible, the inflammation on which it depends. It is a great, though I fear a prevalent mistake, amongst medical men, to suppose that the diseases of children are so frequently dependant upon dentition, or some disordered state of the stomach and bowels, as seldom to require the employment of the lancet. As far as my experience goes, a very considerable number of the ailments to which children are liable, are more or less of an inflammatory nature; and if the morbid process be not speedily arrested, it very frequently runs on to irremediable disorganisation. It is a very great mistake to suppose, that children do not bear bleeding well, as that the diseases to which they are liable do not require it. Where no delicacy of constitution was manifest, I have found children bear bloodletting as well as adults; and I can speak from pretty extensive experience when I say, that there is no disease which more imperatively demands the employment of the lancet, than the pulmonary affection in question."

After condemning the opinion of Dr. Hamilton of Edinburgh, who appears amongst the most conspicuous of the objectors to bloodletting in the diseases of children, the author adduces the testimony of Sydenham, who, in speaking on the same subject, makes use of the following words.

"Nor need any one be surprised at my bleeding young children, since, as far as I have been able hitherto to observe, it may be as safely performed in them as in grown persons; and, indeed, it is so necessary in the peripneumonic fever above mentioned, and in some other disorders to which children are subject, that there is no curing them without it."*

"The earlier the bloodletting is performed, the less occasion in general will there be for its repetition. When the symptoms return after the first bleeding, we must have recourse to it a second, a third, or even a fourth time, if necessary. The quantity of blood to be withdrawn at each time, must depend upon the age and constitution of the patient, the violence of the disease, and the impression that may have been made by the previous treatment on the symptoms. In general, from two to three ounces in one infant between six, and twenty months, will be sufficient. In a child about two years of age, from three to four ounces may be abstracted; and when the age is above four,

* See "Account of the Measles of the year 1670."

about five, six, or eight ounces may be drawn, according to circumstances. In an infant under six months, though general bloodletting may often be required, the application of three or four leeches to the back of the hand or foot, will, for the most part, answer the purpose, where a vein, which is frequently the case, cannot be found. It is better to apply the leeches to the hand or foot,* than to the thorax; for when they are applied in the latter situation, it is difficult to stop the bleeding after they have fallen off; and instances have occurred in which a fatal hæmorrhage has been the consequence of a continual oozing from four or five leech-bites. When they are applied to the hands or feet, the bleeding can be easily stopped, by placing compresses of lint over the bites, and securing them, as after the operation of V.S., by a bandage. As far as my observation goes, leeches applied to the extremities are nearly as efficacious in removing local inflammation in infants, as when applied in the vicinity of the part affected.† They seem to produce the effect of a general bloodletting, as the face and lips become pale, the pulse faulters, and syncope occasionally takes place, followed by vomiting.‡ These effects are apt to be produced when general V. S. is carried to a considerable extent, and sometimes a state of nervous agitation and general commotion is induced, which, if not speedily removed, may terminate in death. The best remedies in a case of this kind are the horizontal position, cool air, and a drop or two of the tincture of opium. Inflammatory as this affection certainly is, I have seldom seen the blood in it, or in any of the other diseases of children, distinctly buffed or cupped; in general the serum is but little disposed to separate from the coagulum, and the whole mass very much resembles that which has been taken from adults affected with continued fever. When blood could not be procured from a vein in the arm, I have frequently obtained it from one in the back of the hand; and when we fail in this also, it can always be procured, and in a very short time, from the jugular. However useful, and indeed indispensable, bloodletting may be in the beginning of this disease, there is a point beyond which it cannot be ventured on without hazard. Where an abundant effusion has taken place into the bronchia, and where, as generally happens, this state is combined with more or less of collapse of the system, the abstraction of even a very trifling quantity of blood might be attended with a fatal prostration. In this stage of the disease, the patient's only chance of recovery depends upon the freedom and copiousness of his expectoration. We must, therefore, husband the strength, and adopt every means which may have a tendency to support the vigour of the system during the severe and frequently protracted struggle by which nature endeavours to get rid of the fluids accumulated in the bronchia."

When the debility is great, and there is danger in having recourse to the abstraction of blood, either locally or generally, we must place our principal reliance upon the application of blisters to the chest, or between the shoulders. Purgative medicines are also recommended; the author has been in the habit of using a combination of calomel and jalap, the quantity being proportioned to the age of the patient, and repeated at intervals until due evacuations are produced. When the bowels have been well opened, the action is to be kept up by administering a grain of ipecacuanha, with one of calomel, every second, third, or fourth hour, according to circumstances. This combination not infrequently excites vomiting as well as catharsis, and when this effect is produced, it is generally of service to the patient. When the lungs are much oppressed, the greatest relief has been observed to follow the administration of an antimonial emetic. In the advanced stage of the disease, when the debility is great, and suffocation appears to be impending, our principal reliance must be placed upon the administration of stimulants. Of these the best is the carbonate of ammonia, which

* We are not of the same opinion, for although we have seen many cases of hæmorrhage from leech-bites requiring professional assistance, we have never failed in promptly arresting the bleeding, by introducing a *very small* compress of lint, wet with the muriated tincture of iron, into the bleeding orifice, and keeping up continued pressure with the point of the finger for a few minutes.—*Rev.*

† The contrary to this is the truth. It has been judiciously laid down as an axiom in the treatment of all inflammations, that the nearer to the inflamed part the blood can be withdrawn, the more immediate and permanent will the relief be.—*Rev.*

‡ This is quite correct; but the quantity of blood required to produce these effects upon the system, must be large; and are we not, therefore, guilty of an unnecessary expenditure of the vital fluid?—*Rev.*

may be given in the dose of three or four grains, every third or fourth hour, according to circumstances. The author has given several cases in illustration of what he has advanced, but our limits will not allow us to insert more than one of the fatal and one of the successful cases. The former will tend to illustrate the pathology of this disease, while the latter will serve as an exemplification of the practice recommended for its treatment.

"April 1st, 1824.—Anthony Fullam, æt. 21 months, Mounteath-street. This boy was seen on the sixth day after the disappearance of the rubeolous eruption. Symptoms: hurried, oppressed, and wheezing respiration, with short cough, unattended by expectoration; countenance and lips pallid, former expressive of much distress; skin hot; pulse frequent and feeble. The disease continued to increase under the employment of blisters, emetics, and carbonate of ammonia, with ipecacuanha; and upon the third day after I had first seen him he died.

"*Dissection.*—Slight adhesion between the superior lobe of the right lung and parietes; both lungs, with the exception of a small portion of the anterior part of either, much more solid than natural; solidity greatest towards the back part, where each lung was completely hepatised; mucous membrane of the trachea and bronchia slightly inflamed; bronchia and air-cells filled with purulent mucus; slight effusion in the pericardium; mesenteric glands enlarged.

"Master T. Y., ætat. six months, was seized, on the 9th of October, 1824, with cough and oppressed breathing, for which he was bled with leeches on the 10th, and from the arm on the 11th. I saw him for the first time, with Mr. Kennedy, on the 13th. His countenance was of a pallid yellow hue, and presented a ghastliness of expression, which startled me not a little on my first entering the room in which he lay. His breathing was hurried, (being 78 in the minute,) slightly laboured, distinctly wheezing, and attended with attenuated dilatation and contraction of the alæ nasi; cough frequent and hard; skin pretty cool, after having been very hot during the night; tongue dry-ish and white; and the evacuations from the bowels, of which he had only one since the preceeding evening, of a deep green colour, and slimy. He was bled to three ounces; a blister was applied to the chest; and powders, consisting of calomel, scammony, and jalap, were directed to be administered at intervals. I visited him at eight o'clock in the evening, at which time the blister had been dressed. I ascertained, that from the time he was bled until within half an hour of the time I saw him, he had remained in a tranquil state, breathing easily, sleeping a good deal, and very little affected with cough. When I saw him, however, the hurried and oppressed state of the respiration had returned, but it was by no means so wheezing as it had been in the morning. A short, hard cough occurred every now and then, during which the child made many ineffectual attempts to expectorate and vomit. To these symptoms were added restlessness, with flinging out of the hands and legs, writhing of the body, and moaning, as if from abdominal pain. He had taken three powders; the first was immediately vomited, but the two last remained in his stomach; and, as the bowels were at this time in the act of being moved by the medicine, I conceived that a good deal of the hurried state of the respiration might be attributed to the general commotion produced by the operation of the purgative. With a view to soothe and tranquillize, I had the child placed up to his hips in warm water, and kept there for a few minutes. While he was in the bath, the expression of the countenance became much more composed, and the breathing was less hurried and laboured. When removed from the bath, and laid upon his mother's knee, he soon feel asleep, and slept tranquilly for some time. While he was sleeping, the respiration, from having been about 80 in the minute, came down to 60, and even to 54, and appeared to be performed with little effort, and without noise. Every now and then he would awake with the short, dry, cough, and ineffectual attempts to vomit, which would always produce, for some time, a considerable acceleration of the breathing, and also render it louder. After the agitation thus occasioned had subsided, he would fall asleep again, and breathe as calmly and tranquilly as before. I gave him four teaspoonfuls of a mixture of syrup of squills and ipecacuanha wine, with a view to excite vomiting; but, though sickness was occasioned, it was necessary to apply a feather to the fauces before the stomach could be made to reject its contents, and even then, all that was rejected was a small quantity of tough glairy mucus. As he was restless and uneasy in consequence of the sickness thus produced, I had him again put into the bath, and it seemed to produce equally good effects as before. When taken out of the bath, he was laid on his side in the cradle, and there I left him asleep, the breathing about 60 in the minute, very slightly wheezing, and, as before, every now and then much accelerated by the cough, or any other cause that produced irritation. On the following morning, the

breathing was 54, without wheezing, or much effort; cough looser; skin cooler; and general appearance of amendment. The affection of the chest becoming in a slight degree aggravated, I applied four leeches to the hand and a blister between the shoulders. Immediately after this all the symptoms subsided, and upon the 18th of October, ten days from the commencement of his illness, he was convalescent.

Case of Open Foramen Ovale in an Adult.

By JOHN CRAMPTON, M.D.

Although there are few cases on record of open foramen ovale in adults, except those related by Morgagni, Corvisart, Hunter, Calliot, Jurine, Louis, and Bertin, it would appear, that instances of this kind are not of very uncommon occurrence. The facilities afforded by the Dublin Hospitals, for investigating the nature of diseases after death, have enabled the physicians of those institutions to collect many curious and important facts, which must otherwise have escaped observation. Dr. Crampton has narrated three cases of open foramen ovale, one of which we shall give.

"James Spellman, æt. 18, was admitted into the Hardwicke Hospital, Feb. 6, 1827, as a fever patient. The thoracic viscera appeared to suffer from inflammation; he had a severe cough, complained of pain in different parts of his chest, chiefly at the left side, expectorated blood, and was distressed in his breathing. After two venesections, and other remedies, on the 14th he appeared convalescent. From premature exposure, however, in a ward which, at this season, was unusually cold, he soon suffered a relapse. The symptoms, which now assailed him, were those of acute rheumatism, with which almost all his joints were occupied, being excessively tumid, painful, and accompanied with a high degree of fever. In a few days the swelling of the joints abated, but the rheumatism became metastatic, the pectoral organs being again attacked, more especially the heart, in the region of which he appeared to suffer extremely. The pulse, during the first attack of fever, had been full and frequent, but regular; in the subsequent rheumatic attack, it preserved the same character; but as the attending pyrexia appeared to subside, an occasional intermission or irregularity was observed. It was necessary to adopt a very active practice. Repeated bleedings, and other modes of relief, were resorted to, otherwise it was obvious his respiratory organs would have been overpowered. It was equally clear that a cold fever-ward was not a place suited to his case, which had now become complicated, but of a more chronic character. Indeed, the conclusion which I was at this time disposed to adopt, was, that severe organic lesion in the heart and lungs had occurred, as the sequela of fever and acute rheumatism, in a subject perhaps strongly predisposed to disorder in those important viscera. On the 27th of February, the symptoms were pain in the region of the heart, severe cough, with a croupy sound, much muco-purulent expectoration, great distress in his breathing. At this time, he stated he had for years been occasionally subject to pain in the left side, but particularly after running, or any active exertion; his pulse extremely rapid, sometimes irregular; countenance pale; feet œdematous. The stethoscope indicated acute bronchitis, with hypertrophy, and disordered action in the heart, the motions of that organ being tumultuous and irregular. On the 3d of March, the pulse became slower, about 80, but very regular. On the 4th, he suffered excessive distress in his breathing, or *smothering*, as he expressed it. On the 5th, pulse again so rapid as not to be counted; he complained of great pain in the region of the heart, and he was evidently growing worse; on the 6th a slight amelioration took place; but from this period, until the 10th, he gradually sunk. On this day he expired.

Dissection.—The thoracic cavity was examined on the 12th. On opening it, the lungs did not collapse; but the external appearance of this organ was healthy; the parenchymatous tissue exhibited some portions red, congested, and evidently inflamed; the bronchia vascular, and filled with a muco-purulent effusion. Pericardium contained about two ounces and a half of fluid, in which a considerable quantity of lymph was seen; inner surface of this membrane not inflamed; but that portion of it which is reflected on the heart, showed marks of inflammation in several places; both ventricles were much enlarged, exhibiting considerable hypertrophy; the semilunar aortic valves showed recent *cauliflower*, excrescences attached to all of them. Both ventricles were quite filled with a dense white coagulum firmly attached to the parietes. The commencement of the aorta appeared unusually narrow, in proportion to the heart and to the subject; that of the pulmonary artery greatly enlarged. The auricles of the heart were also in a state of considerable dilatation; but the circumstance which attracted most attention was, that the foramen ovale was open; but the manner of this opening must be more fully described. The septum, between the auri-

cles, exhibited an oval depression, or attenuated space, of about one-third of an inch in diameter, guarded only by a thin membrane; but, at one side, it was evidently pervious and open, with a rounded and thickened edge. This membrane acted like a curtain or valve; when viewed, or pressed from the left auricle, it was closed, the curtain or membrane pressing close, and overlapping the opening; viewed from the right auricular cavity, or touched with a probe, it opened, and allowed a free passage, fully as large as a goose's quill, compressed so as to exhibit an elongated or oval section. The blowpipe exhibited the same difference of a closed or open space, as it was used from the left or right side of the auricular. There was no trace or appearance of inflammation in the auricular portions of the heart, at least none could be discerned on the inner membrane. In the cavity of the abdomen, there was considerable serous effusion. The villous coat of the stomach appeared red; the cæcum contained a number of small worms; the liver healthy; the gall-bladder infiltrated with serum, so as nearly to fill up its cavity."

A preparation of the heart, with the foramen ovale unclosed, is preserved in spirit. It was considered unnecessary to make a drawing, as there is a fac-simile in "Bertin, Traitè de Maladies de Cœur."

SINGULAR CASE OF SIMULTANEOUS EXTRA-UTERINE, AND UTERINE FŒTATION.*

Mrs. K., ætat. 33, of robust habit, was affected a few months after marriage with slight pain in the left side of the lower part of the abdomen, accompanied with a gradual enlargement of the breasts and the abdomen, with frequent nausea and vomiting. For some time the catamenia flowed regularly, but at length entirely ceased; the pain and vomiting being at this time greatly increased. In April 1825, when the patient was first seen by Dr. Detwiller, the relater of the case, the left ovarium was greatly enlarged and hard to the touch, without much tenderness or pain in the surrounding parts of the abdomen. When the patient lay on her back, or was even in an erect position, the *distended uterus* could also be distinctly felt through the abdominal parietes, particularly on pushing the enlarged ovarium to the left side. On examination *per vaginam*, in different positions, the vaginal portion of the uterus was found tumefied, but was not so high up as it is usually found to be at this period (third month) of pregnancy. The *os tincæ* was small and circular.

It was considered probable that the woman was pregnant; treatment was employed in reference to the sickness and pain, and during the fifth month the motion of the fœtus in utero was perceived. On the 22d of October, 1825, labour commenced, and in eighteen hours a healthy and well-formed child was born. The placenta came away without difficulty, and the uterus contracted regularly; the loss of blood was not greater than usual. During parturition, and for two days after, the ovarian tumour, which was now very large, was free from pain; but on the third day the woman complained of much pain in the left hypogastric region, and the abdomen was exquisitely tender at this part. Rigors, which were succeeded by high febrile excitement, supervened: but, notwithstanding the active use of antiphlogistic means, the woman sunk on the eleventh day after delivery.

On opening the abdomen, about four quarts of serous fluid were found in its cavity. The left ovarium was situated in the left hypogastrium, of which it occupied the whole extent, covering the uterus and left kidney, and extending into the right hypogastrium. On the right side of this ovarian tumour, there was an opening of about an inch in length, through which a fluid, similar to that which was found in the abdomen, issued on pressure. The small intestines, as well as the peritoneum, were marked with a number of gangrenous spots. The uterus was gangrenous on the superior part of the left side of the fundus. The remaining portions of the uterus, and especially its neck, were sound. The fallopian tube and the broad ligament of the left side were considerably thicker than those on the right, which latter also were more fleshy and enlarged than in the natural state. The former were gangrenous throughout. The left fallopian tube appeared to be pervious through its whole length. The fimbriæ were very remarkably enlarged. The ovarium of this side, after the evacuation of about two quarts of a watery fluid, was of an irregular elliptical shape, measuring in its longest diameter (from the right to the left side) seven and a half inches; and in its shortest diameter (from before backwards) three and three quarter inches. The diameter from above downwards measured six inches. This ovarium exhibited marks of gangrene, particularly at the membranous part of the right side; on laying it open, the crowns of four molar teeth and two incisors were seen; the crown of a fifth molar tooth was also found buried in the mass of the tumour. All the teeth were very white,

* Condensed from the Philadelphia Monthly Journal of Medicine and Surgery.

and perfectly regular in their structure; the six first mentioned were separately attached to pieces of bone. Throughout every part of the membranous cavity of the ovarium, a number of whitish hairs were found; in some parts there were considerable tufts of them of an inch and a half in length.

A number of bones, of various sizes and forms, were found imbedded in the solid mass of the tumour; none of these, however, approached to the shape of any of the bones of the human skeleton, though, in their intimate structure and composition, they were essentially osseous. The membrane, which, with the solid part of the mass, formed the large cavity, consisted of two laminæ, closely united by cellular texture. The right fallopian tube, with its fimbriated extremity, exhibited no marks of previous disease, with the exception of their increased thickness. The right ovary was enlarged, and contained about four ounces of a slightly turbid fluid. Upon cutting into the membranous sac which contained this fluid, a small fleshy mass was detected, which, like that found in the left ovary, was interwoven with hair, but contained no bony substances.

[There are various cases on record of extra-uterine fœtation, combined with ordinary pregnancy. In the first volume of the Philosophical Transactions, published in 1756, a case is related of a woman, who was pregnant with the same fœtus (extra-uterine) eighteen years, during which time she was delivered of another infant, and finally discharged the bones, integuments, &c., of the first, by an abscess to which it gave rise. In the same Transactions for 1747, Mr. Francis Drake gives the history of a case of extra-uterine pregnancy, which had continued between three and four years, when the patient was delivered of a living infant at the full time, and the extra-uterine fœtus was subsequently discharged by an abscess. In the same publication, there is also a case related by Dr. Middleton, in which it is stated a woman was pregnant for sixteen years of an extra-uterine fœtus, during which time she was delivered of four infants, and, at the end of this period, the first fœtus was found in the abdomen.]

AMERICAN SURGERY.—SUCCESS IN THE OPERATION OF LITHOTOMY, WITH THE GORGET.

A recent number of the *National Gazette* contains a statement professedly from an authentic source, to the effect that Dr. Dudley, professor of surgery in the Transylvania University, has performed the operation of lithotomy in *seventy-two* successive instances, without the occurrence of a single fatal case. Dr. Dudley employs the GORGET, but not the STRAIGHT STAFF.

SYSTEMS OF NATURAL HISTORY.

If we employ, exclusively, as the basis of our classification, any one of the systems of organs, we shall find, that having formed a *natural genus* from the obvious marks which it furnishes, it shall contain species differing greatly from each other, in the characters exhibited by one or more of the remaining organs of the other systems. The genus helix, of Linnæus, is a natural genus, in reference to a portion of the cutaneous system, the shell; but it exhibits in the characters of sentient, nutritive, and reproductive systems of the species, artificial combinations. Even when there is a very close agreement among the species, in regard to several systems of organs, remarkable differences prevail in the function of others. The genus lepus, universally considered as a natural one, may serve as an illustration, by contrasting two of the best known species, the hare and rabbit. These animals so nearly resemble each other in form and structure, that it has puzzled the most experienced zoologists to assign definite distinguishing marks.* Yet there are many circumstances in which they differ, (besides the colour of the flesh when boiled, and their manner of escaping from their foes,) in reference to the reproductive system. The nest of the hare is open, constructed without care, and destitute of a lining of fur. The nest of the rabbit is concealed in a hole of the earth, constructed of dried plants, and lined with fur, which is pulled from its own body. The young of the hare at birth, have their eyes and ears perfect, their legs in a condition for running, and their bodies covered with fur. The young of the rabbit at birth have their eyes and ears closed, are unable to travel, and are naked. The maternal duties of the hare are few in number, and consist in licking the young dry at first, and supplying them regularly with food. Those of the rabbit are more numerous, and consist of the additional duties of keeping the young in a suitable state of cleanliness and warmth. The circumstances attending the birth of a hare are analogous to those of a horse, while those of a rabbit more nearly resemble the fox. This illustration furnishes a very striking example of the danger of trusting to analogy, since very remarkable differences may prevail, even where the points of resemblance are very numerous, and justifies us in concluding, *that, in a natural genus, there are artificial combinations.*—*Fleming's Zoology*, vol. ii. p. 140.

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* There is a paper, by the Honourable Daines Barrington, containing an "Investigation of the specific characters which distinguish the rabbit from the hare."—*Phil. Trans.* 1772, p. 4.

THE LANCET.

London, Saturday, June 7, 1828.

A PLAN for restoring a system of "Hole and Corner" surgery in our public Hospitals, has recently been put forth by one of our enlightened contemporaries, who, like the late editor of the Quarterly Journal, derives his title to our veneration from that pure fountain of medical science, the University of Aberdeen. The plan is evidently the fruit of much profound and philosophical meditation; it is bold in conception, and felicitously adapted to the wants of that portion of the profession, whose interests stand most in need of protection. It was suggested to the mind of the projector, as he himself is obliging enough to inform us, by an ingenious process of reasoning. He reflected that, when an evil becomes intolerable, it is high time to consider whether it ought to be borne, or whether it may not be easy to find a remedy for it. Having established this general proposition, he proceeded to apply it to a particular case, and to inquire whether the evil which hospital surgeons sustain from publicity being given to their failures and occasional mistakes, ought any longer to be endured; and whether, in point of fact, it did not admit of an easy remedy. These questions, the Aberdeen graduate resolves in the affirmative; and the remedies which he suggests, are the forcible ejection of students, convicted or suspected, where the grounds of suspicion are strong, of reporting cases from the wards of our public hospitals, and the exclusion of such offenders from the pale of the profession.

Such is the account which the author of this plan gives of the way in which it was suggested to his understanding; and, when we consider the time at which he brings it forth, we can hardly be too lavish of our admiration at the manner of man who, in the present state of public and professional feeling, could broach such a proposition. It is the time of its production, indeed, which constitutes its peculiar merit; for the same suggestion was in substance made by Dr. JAMES JOHNSTONE, shortly after the establishment of THE LANCET. He, too, felt a warm sympathy for the less-gifted portion of his professional brethren, and denounced the publication of cases in which a hospital surgeon might, from negligence or ignorance, destroy the life of a patient, as a demoniacal proceeding, in which none but *vampires* could indulge. He, too, recommended, at the period to which we allude, the expulsion of all students, who might be convicted of transmitting to a medical journal any report of a case occurring in a public hospital. Dr. JAMES JOHNSTONE, however, lived long enough to change his opinions, and to give the best practical proof of the sincerity of his recantation. Peace be to the *manes* of the Quarterly Journalist! but, in justice to the memory of the departed Reviewer, let us record that he lived long enough to abjure his errors, and to kiss the rod, at whose salutary application he had once the frowardness to recalcitrate. He lived long enough to denounce as *vampires*—not those who furnished reports of hospital cases to medical journals—but all who ventured to throw any obstacle in the way of hospital reporters. He lived long enough, not merely to acquiesce in the publication of hospital cases in this Journal, but quietly to transfer whole pages and sheets of our reports to his own quarterly farrago. He lived long enough, not only to repent him of the language he had once held with regard to hospital reporters, but actually to offer a premium to students, who might furnish him with reports; that premium being a complete set of his own journal, wherein he had recommended the expulsion of pupils convicted of the offence, to the commission of which he afterwards held out such irresistible inducements.

There is a class of persons, to whose understanding Nature has been sufficiently bountiful to enable them, like pigs, to smell the quarter from which the wind blows, and to make a reluctant sacrifice of individual prejudice, to what they have sagacity enough to perceive to be the general sentiment of the community. There is also a class, whose intellect is of more contracted dimensions, and from whose stock of ignorance, no experience, or opportunities of observation, subtract one iota of imbecility. To this latter class belongs the individual who has just broached his plan for the revival of a system of "Hole and Corner" surgery, in our public hospitals. Time flows in vain for a person of his intellectual *calibre*; and experience, which enlarges the perceptions of a healthy mind, serves only to confirm his prejudices, and to render his obtuseness incurable. His understanding is in the intellectual, what clay is in the chemical world; for, as that substance furnishes the exception to the expansive powers of heat, so his intellect contracts under the influence of those rays of knowledge, which expand the sphere of other men's acquisitions. He does not perceive that the new source of knowledge which THE LANCET opened to the profession and the community, by the publication of hospital reports, has become an integral portion of the stock of public information. He does not perceive, and he is, in all probability, incapable of perceiving, the absurdity of suggesting schemes for cutting off this supply of information from the public. Still less does he perceive the folly of supposing that the surgeons of public hospitals have a right to take any steps which may deprive the public of the means of knowing in what manner those functionaries discharge their public duties. Hospital surgeons are the paid and responsible servants of the public; and when we consider the great collateral advantages connected with the possession of hospital surgeoncies, and the manner in which these advantages are, in many instances, monopolised by particular families, it is obvious that the public would have no security for the adequate discharge of the duties of hospital surgeons, unless those functionaries were amenable to public opinion. Take away all responsibility, and you, at the same time, remove all check upon that corrupt desire, which too frequently prompts men to advance the interests of their families, at the expense of the interests of the public. Sir ASTLEY COOPER once openly avowed, that all the official surgical situations in St. Thomas's and Guy's Hospitals, were filled by his nephews, godsons, and apprentices. The worthy Baronet made this avowal with his characteristic simplicity, not perceiving the inevitable inference which the "reptile press" would draw from it, namely, that the individuals who hold these situations, were indebted for them not to superior ability, but to corrupt influence. Such a system of patronage, it must be admitted, is bad enough; but the evil would be ten thousand-fold aggravated, if there were, not only no fair competition for the office of hospital surgeon, but no responsibility for the adequate discharge of its duties. Far better would it be for the interests of humanity, that there should be no institutions in this country purporting to afford succour to the destitute sick, than that the doors of our hospitals should be closed against the public, and the operating theatres made a secret arena, where inexperienced tyros might attempt to improve themselves in their profession, at the expense of human suffering unnecessarily protracted, or human life unjustifiably destroyed.

One of the arguments urged by our contemporary in favour of the suppression of hospital reporters, has, we believe, the merit of originality; at any rate, no member of the profession has hitherto had the anility to give printed currency to such an argument. The public, he says, are singularly ignorant of the arcana of medical science; therefore, no attempt ought to be

made to convey information to them on professional subjects. The writer reverses the prayer in the liturgy, and, as the public are already ignorant, beseeches that their darkness may never be lightened. To an ordinary apprehension it might seem that, if the public information with respect to medical subjects be below par, as compared with the amount of general intelligence on other branches of knowledge, such defect of information would be best corrected by creating and diffusing an interest for a science so little understood and appreciated. "No," says our enlightened contemporary, "the public are singularly ignorant of medical subjects; and it is not the interest of practitioners that they should be let into the secrets of the profession." This is, indeed, the language of a *charlatan*, and might well beseem a Scotch doctor, who is in the habit of prescribing *pilulæ è mică panis* for his female patients, and that too, not merely in hypochondriacal cases, but in a complaint demanding such energetic therapeutic agents as amenorrhœa. Our contemporary knows and feels that we speak advisedly, and, if we refrain for the present from showing up some of the HUMBUGS in the medical oligarchy, who have impudently pretended to domineer over the great body of the profession, our forbearance arises rather from contempt than from want of materials.

THE appeal to the members of the medical profession, printed on the cover of our present Number, will not, we sincerely hope, be made in vain. The unfortunate gentleman who solicits the support of his more opulent professional brethren, is pressed to the earth by disease and pecuniary embarrassments. Unfortunately, he has a large family of children, (the majority daughters,) who look to him in vain for almost the common necessaries of life; and this, too, after having been the owner of a handsome establishment and a lucrative practice. From these facts, *fathers* may form some notion of his present wretchedness. The testimonials which the unhappy gentleman has laid before us, and the personal assurances of his private and professional friends, convince us that he is not reduced to his present state either by idleness or by dissipation; and that his conduct has been as irreproachable as his integrity is unimpeachable.

DR. T. WEATHERILL, of Liverpool, on the 12th ult., extirpated from a woman, aged thirty-seven, and mother of five children, the neck and part of the body of the uterus. Up to the present time, she has not had a bad symptom.

The Doctor promises to forward the particulars of the case at an early period.

ST. BARTHOLOMEW'S HOSPITAL.

CASE OF POLYPUS UTERI, WITH LARGE ENCEPHALOID TUMOUR IN THE PELVIS—THE POLYPUS REMOVED BY LIGATURE.

ANNE LEACH, ætat. 30, of spare habit, was admitted into St. Bartholomew's Hospital, Jan. 25th, under the care of Mr. Lawrence. She has had good health until about four months ago, when she fell and received a severe blow on the lower part of the back. She suffered much pain about the sacrum, and in a month after the accident, began to experience uneasiness and difficulty in voiding the fæces. There has been great discharge of reddish ichorous fluid from the vagina. She has menstruated but once since the injury. On examination, a large, rather firm, insensible tumour was felt in the vagina, of a pyriform shape, with an irregular lobulated surface, and attached by a narrow neck to the posterior part of the os uteri. She complained of pain in the loins, with a sense of bearing down. There was great difficulty in discharging the fæces: a copious discharge of thin mucus from the vagina.

On the 3d February, a strong silk ligature was passed round the root of the tumour, and drawn tightly by means of the double canula described and represented in Richter's Elements of Surgery, and always em-

ployed for the same purpose by Dr. Gooch, who has kindly given his opinion in this case, and attended when the operation was performed. Some pain followed, and was relieved by a dose of laudanum. The ligature was tightened daily, and on the fourth day the polypus came away, whilst the patient was discharging the fæces. She had now less difficulty in passing her motions; but, in a few days, she complained of increased pain about the back and loins; the left foot and leg became œdematous, and she had occasional severe pain shooting down the thigh. The difficulty of passing the fæces increased, and she had slight glairy discharge from the rectum. On making an examination, a large firm tumour was felt situated between the sacrum and rectum, bulging into the latter, pushing it on one side, and obstructing the intestine so considerably, that the finger could only be passed beyond it after repeated trials, and with much pain. The bowels were kept open by the occasional use of saline aperients, and glysters introduced by means of a long pipe passed up beyond the tumour: opium was given at night to quiet the pain. She left the Hospital Feb. 28, but the pain had increased so much, that she returned in three weeks. The tumour had increased considerably, and, from its pressure on the rectum, had prevented the discharge of any but liquid fæces; the swelling extended above the left ilium; the abdomen was distended and very painful. The left thigh and leg were enormously swollen and œdematous, and she complained of great numbness, with occasional severe pain. Her pulse was feeble; there was loss of appetite, and she was much reduced. The bowels were kept open by glysters, and she took nourishing diet, with port wine. The swelling in the pelvis increased; the left extremity became more swollen and painful; the fæces were passed with the greatest difficulty, and the glysters were generally returned. The pain in the abdomen was very severe, and wholly deprived her of rest; she was unable to take her food, her stomach was very irritable, and she had frequent vomiting. She grew more feeble, and expired on the 23d of April.

On examination, a large tumour was found situated between the sacrum and rectum, and extended above the brim of the pelvis. It was firmly adherent to the whole concavity of the sacrum, and part of the left ilium, and had pushed the rectum completely to the right side. It had a pulpy and elastic feel, and when cut into, was found to consist of a soft brain-like substance. The mucous membrane of the rectum was very vascular, but its coats were not otherwise diseased. The pelvic viscera, the great omentum, the lower convolutions of the small intestines, and the corresponding portion of the abdominal parietes formed the sides of an immense abscess, containing at least two pints of thick and very fœtid pus. The parts above enumerated were firmly agglutinated in the circumference of this purulent collection. The left psoas magnus was elevated by a large cyst, containing about a pint of yellow transparent fluid. The texture of the uterus was natural. The posterior labium of the os tincæ exhibited a reddish mark, scarcely elevated, about the size of a sixpence, which showed where the polypus had been attached. There were about two ounces of turbid serum in the pericardium; and its serous membrane, as well as that reflected on the heart, was covered with adherent lymph, having a honey-comb appearance. The other organs were healthy.

CASE OF POLYPUS UTERI, IN WHICH THE TUMOUR WAS DETACHED BY SPONTANEOUS ULCERATION OF ITS NECK.

E. Wardle, aged 27, a tall, robust, unmarried woman, was admitted into St. Bartholomew's, Jan. 17, 1828, under the care of Dr. Hue, having always enjoyed good health, and menstruated regularly. Two days before admission, profuse bleeding took place from the vagina, accompanied with pain in the lumbar region, and bearing down. She had very feeble pulse, and great pain in the head. As the bleeding, though partially checked by the application of cold to the hypogastric region, and by injection into the vagina of cold water and solution of alum, frequently recurred, and had reduced her excessively, Dr. Hue referred the case to the surgeon for examination. Mr. Lawrence discovered in the vagina a fleshy tumour of moderate firmness, twice the size of a hen's egg, with an irregular and somewhat granulated surface, and a slender neck passing into the os tincæ, which could be felt round it. He considered it a case of polypus uteri, and the patient was removed into his ward for the application of a ligature to the neck of the tumour. Dr. Gooch saw the case at Mr. Lawrence's request, and concurred in the propriety of the operation, for which every thing had been prepared; but the patient positively refused to submit to it. The Doctor observed, that if the bleeding, which had now ceased for some days, should recur, and the patient should still object to the ligature, he thought that the neck of the polypus was so slender, that it might be twisted off with a pair of forceps, or with the finger and thumb. At the end of a week, during which there had been no further bleeding, the patient had somewhat recovered her strength and spirits, and expressed her willingness to undergo

the operation. No tumour, however, could now be discovered, and the os tincæ was in its natural state. When closely questioned, the patient represented, that whilst in bed she felt something pass from the vagina; that it was a kind of fleshy substance, nearly equal in size to her fist, of a dark dirty appearance, and very offensive; some bleeding followed, but stopped soon. She continued feeble, and suffered particularly from pain in the head. Regarding the latter symptom as a consequence of the large and repeated losses of blood, Mr. Lawrence ordered the mistura ferri comp., with nourishing diet, and a few ounces of port wine daily. Under this plan the headach soon went away, and the strength was restored, so that she was able to leave the Hospital for the country in three or four weeks.

If the neck of the polypus be short, it must become stretched when the tumour is expelled from its original seat in the uterus, and we may hence explain the ulcerative process, the hæmorrhages, and the spontaneous detachment of the growth which occurred in the present instance. When Mr. Lawrence first examined this case, there was in the vagina a large quantity of thick reddish, and very offensive fluid, which made him at the time entertain some doubts about the nature of the affection. This must now be regarded merely as a mixture of matter and blood, proceeding from the ulcerated neck of the tumour. Dr. Gooch mentioned one or two instances in which he had known polypi to be separated in the same way; and another, of a very small polypous growth, which, after coming through the os tincæ, had receded into the cavity of the uterus, so that it could no longer be felt from the vagina.

On Saturday, May 24th, Mr. Lloyd tied the brachial artery in a case of aneurism, at the bend of the arm, produced by puncture in venesection.

The aneurismal tumour was circumscribed, about the size of a large walnut; it was much diminished when compressed, but returned again as soon as the pressure was removed. Immediately after the ligature was tied, there was a total cessation of the pulsation of the tumour, and a manifest diminution of the swelling. In the evening the pulse was perceptible at the wrist, and there was slight pulsation in the tumour; the temperature of the limb was not sensibly increased. The pulsation of the tumour continued the two following days, since which it has become more obscure, and has now (May 29th) entirely ceased. The tumour is hard, and cannot be reduced by compression. The pulse of the radial artery is distinctly felt.

ST. THOMAS'S HOSPITAL.

SIMPLE FRACTURE OF THE CRANIUM, WITH EXTENSIVE DEPRESSION, UNATTENDED WITH SYMPTOMS OF COMPRESSION OF THE BRAIN.

Michael Morris, a child four years of age, was admitted into Mary's Ward, on the 26th of May, on account of extensive depression of the left parietal bone, the result of injury. It was ascertained, upon close examination, that the extent of depressed bone was about three inches and a half in diameter. The centre of the fractured portion was most depressed, it being about half an inch below the level of the surrounding sound bone. There was slight depression of the right parietal bone, and a simple fracture of the os humeri. The accident occurred from the wheel of a loaded cart having passed over the head and arm.

The child was admitted about twelve o'clock at noon, and notwithstanding the great extent of depression of the cranium, he was perfectly sensible. The head was ordered to be shaved, and the spirit-wash applied subsequently; a dose of scammony and calomel to be given immediately. In the evening there was increased action of the pulse, and six ounces of blood were in consequence taken from the jugular vein. The child was reduced to syncope by bloodletting, and in the course of the night the bowels were freely evacuated.

From the last-mentioned time to the close of the present report, (June 2d,) the child has, in every respect, done well; he is, in fact, quite well. The depression of the bone, of course, remains.

CASE OF SIMPLE FRACTURE OF THE TIBIA, FOLLOWED BY EXTENSIVE SUPPURATION AND DISEASE OF BONE.—AMPUTATION.

The Junior Surgeon performed the operation of amputation below the knee, on the 28th of May, under the following circumstances:—

John Challender, ætat. 39, was admitted into Abraham's Ward, on the 4th of December, 1827, with simple fracture of the tibia. He stated, that on the 16th of October, he received a blow with a stick on the fore part of the leg, of which he took no notice at the time, but on the following day he experienced so much pain, that he was obliged to keep his bed. A poultice was applied, which afforded much relief, and on the same evening he resumed his duties; the pain, however, after a few hours, became so severe, that he was compelled to return home. On the next day he had medical advice, and was confined for ten days, at the expiration

of which time he walked about with the aid of sticks. Two months had elapsed since he received the accident, when he applied at the Hospital.

Upon examination, there was found to be a transverse fracture of the tibia; the man was put to bed, and the limb placed in a swing-box.* There being considerable redness immediately over the seat of fracture, without the other signs of inflammation, a poultice was simply applied, and house medicine ordered to be taken occasionally. Three weeks after admission, a puncture was made in a small abscess, which had formed on the leg. This readily healed, the soap plaster was applied, and the leg bandaged, a small opening being left for the escape of matter. In this condition the limb remained until the 14th of January, when the soap plaster was removed, in consequence of acute pain, and a large poultice was applied over the leg. The bowels, at this time, were very much disturbed, and he was affected with vomiting and occasional hiccup. A sinapism was applied to the pit of the stomach, and three grains of quicksilver with chalk, with half a grain of opium, ordered to be taken three times a day. This medicine was continued for nine days, with much benefit, but, at the expiration of that time, the sickness having recurred, effervescing medicine was prescribed.

On the 20th of February blood was taken from the arm, and calomel with opium prescribed; the limb was removed from the swing-box and placed on a pillow, with the knee flexed, inclining outwards, and the heel raised. Extensive suppuration was now going on, and small portions of bone had occasionally exfoliated. The discharge continued to be profuse for several weeks, and eventually became so offensive that a solution of the chloride of soda was applied as a lotion, which almost immediately destroyed the fœtor. The man was occasionally seen by Dr. Elliotson, on account of sickness, for which the prussic acid was given with benefit; the general health, however, became much impaired by the long-continued and profuse suppuration.

On the 24th of May, as the man was endeavouring to raise his leg, he heard something crack; it proved to be a fracture of the fibula, the bone having previously been destroyed partially by disease. In consequence of the wound having considerably enlarged, and the patient's health being much impaired, all attempts at saving the limb were abandoned, and amputation was proposed.

The operation was performed on the 28th, as before stated, and the man is doing well.

* A machine of this description is occasionally used by the Junior Surgeon in cases of fracture of the tibia. It is an old machine, with a few improvements (alterations, perhaps, is a better word); yet the man has the modesty to call it *his* fracture apparatus!

GUY'S HOSPITAL.

FATAL CASE OF OBLIQUE FRACTURE OF THE THIGH.

George Martin, ætat. 64, of short stature, and muscular, was admitted into Accident Ward, Sunday, May 18th, under Mr. Bransby Cooper, for a supposed fracture of the neck of the thigh bone within the capsular ligament.

The patient stated, that he was walking across the room, when his great toe, coming against some uneven portion of the floor, he was thrown down, and found himself quite incapable of rising. He was taken up, and shortly afterwards conveyed to the Hospital. At the time of his admission, there was an evident shortening of the limb to the extent of an inch or more. The knee and foot were everted, and a more than ordinary degree of deformity of the thigh was observed. The crepitus, on extension and rotation, was very distinct, but the mobility of the great trochanter, generally noticed in these cases, was not distinctly observed. The nature of the symptoms, and the manner in which the accident had occurred, at once led the dresser to conclude, that it was a fracture of the neck of the bone within the capsular ligament of the joint. The limb was, however, laid on an inclined plane, and put up in splints, as in an ordinary fracture of the shaft. The patient appeared to be going on well, until the Saturday after his admission, when he complained of pain in the abdomen, but which he said he was frequently subject to. He also stated, that for the last six years he had suffered from some paralytic affection of the sphincter ani and bladder, so that he was always annoyed by an involuntary discharge of the urine and fæces.

On the Sunday, the pain in the abdomen had considerably increased, and on examination it was found that there was a swelling situated just above the pubes reaching to the umbilicus. The appearance it presented, the sensation it communicated to the hand on feeling it, and the other concomitant circumstances, (such as the age of the patient, and the probability of his having an enlarged prostate, which caused the urine to dribble away,) led to the belief that

the bladder was distended, and a catheter was accordingly introduced. A very small quantity of urine escaped, and the swelling remained. It was tender when touched; the patient was feverish, the skin was hot and dry, the tongue furred; the pulse small and quick. The abdomen was ordered to be frequently fomented. No medicine was prescribed.

On the following Tuesday, May 27th, Mr. Bransby Cooper again saw the patient; the swelling remained just the same, and a catheter was again introduced, but not more than two ounces of healthy urine were drawn off. It was again remarked, how much it appeared like a distended bladder; but an attentive examination at once convinced us that it was a spasmodic rigidity of the lower part of the recti muscles. The patient's stools and urine escaped from him involuntarily. He had been taking the chalk mixture with opium, from the time of his admission. The skin was still hot and dry; the pulse small, quick, and jerky; the tongue dry and furred. Ordered to take five grains of blue pill, with eight grains of the compound powder of ipecacuanha every night.

May 28, Wednesday. The patient had passed a restless night, and this morning became comatose. The abdomen is still excessively rigid.

29. He expired this morning at three o'clock.

Post-mortem Examination.

The fractured limb was first examined. On cutting down to the thigh bone it was found that the fracture had taken place obliquely just below the insertion of the psoas magnus and iliacus internus. The lower portion was drawn upwards to the extent of three inches on the inner side of the upper portion; its projecting end had perforated the adductor magnus, and was resting in contact with the ischium. There was considerable laceration of the muscles around the fracture, and a large suppurating cavity had already formed. Thus the spasmodic rigidity of the abdominal muscles could, in some measure, be accounted for. Various morbid appearances in the splanchnic cavities were detected, of which the following are the principal: partial alteration in the structure of the right kidney; complete disorganisation in the left, which was not one third of its original size. The ureter of that kidney was much diminished in diameter, and a mulberry calculus of moderate size was found in one of the infundibula. There was partial inflammation of the spleen, and some traces of disease in the lungs: the brain was tolerably healthy.

WESTMINSTER MEDICAL SOCIETY.—PHRENOLOGY.

To the Editor of THE LANCET.

SIR,—In the 242d Number of your Journal, (for 19th April,) you have given a report of the proceedings of the Westminster Medical Society, on which I shall beg leave to offer you some remarks. It appears that Dr. Epps read to the Society a paper "On Insanity," in which he pointed out the importance accruing to mankind from the consideration of diseases of the mind. The opinions of Dr. Epps, however, did not coincide with those of Mr. Bennett, Dr. Ley, and others, who, instead of answering the arguments employed by Dr. Epps, pronounced, dogmatically, on the independency of mind on matter, and concluded that Dr. E.'s only aim was to introduce phrenology. Nevertheless, it appears that the arguments of Dr. Epps are well worth considering, and whether they bear or not on phrenology, seem to be derived from correct observations. Dr. Epps first mentioned the evils resulting from considering insanity incurable, and traced this to a belief entertained of mind being distinct from matter in respect to its manifestations. I would ask, is there a single proof of manifestation of mind, unaccompanied by matter? Is there any state of sublunary entity which is immaterial, or which is manifested to the senses in an immaterial shape? Children and old women talk of ghosts and witches, but they never make other people see them. If insanity be really a disease of immateriality, and if immateriality be really independent of corporeal impressions, then is insanity incurable, as all attempts to cure material agency must be futile. Let us, for the sake of argument, admit such a position, and let us observe the results of such belief. Insanity, being believed incurable, will be neglected; thousands of valuable minds will be lost to the world, and cruelty will be allowed to be exercised on individuals imagined to be dead to the rest of mankind; they will be imprisoned during their lives, and there will be no interest in prolonging a life so useless. On the other hand, as soon as insanity is shown to be but an irregularity in the operations of the brain, the mind's instrument, from disordered circulation of blood, organic disease, or affections by means of injurious substances applied to the external senses, then will attempts be made to remove the several causes, and hence will the instrument be restored to its natural functions.

My first object will be to show, that mind does actually depend on matter for its manifestations.

Man only feels by the aid of nerves dispersed through his body, and terminating in his brain; he only commands his actions by the impulse given to his nervous system, through the medium of his brain; experience enables us to ascertain, that man ceases to feel in those parts of his body of which the communication is intercepted; we must, then, admit, that sensation does not reside in those parts, but in the origin of the nerves, and, as the nerves emanate from the brain, we must consider that to be the focus of mind. Thus I have traced motion and sensation from their terminations to their sources. Now, as to the effects of the intellectual faculties depending on the development of brain, I may add, in infancy the mind is infantile, and its instrument soft and but partially developed; as it becomes harder, the first gleams of thought appear, and, with them, the powers of willing and beginning motion. In senility the mind is enfeebled, and the brain is deteriorated. In the meridian of life it is largest, and more supplied with blood, and its operations more powerful and more numerous; when it is wanting, phrenic life is wanting also, and when it is exceedingly developed, its operations are precocious; when injured by severe blows, its functions are annihilated; when excited artificially, its operations are more manifested; when it is robbed of its natural stimulus, the blood, its effects are suspended; when acted upon by heat, or artificial excitement, its operations are more acute; and when influenced by cold, its evidence is destroyed; the brain being diseased, the mind is diseased also—(epilepsy, apoplexy, and such diseases as injure the structure of the brain, produce sudden and extraordinary changes in the connexion of ideas)—sane, and its jurisdiction is unimpaired. Such are the inseparable affinities between mind and matter. Whether the brain may require an immaterial principle, superadded for the manifestation of its powers, I am not prepared to say; to investigate this is the province of the metaphysician, and into these subtile and perplexed disquisitions I have no design to enter, so true is that saying of Montaigne's, when we attempt to carry knowledge far—"*tout finit dans l'ebloüissement*"—I shall content myself in weighing those principles which are deduced from a candid view of natural facts, which are self-evident, confirmed by constant experience, and approved by reason. I think it will be readily granted me, that experience is the surest guide; by the aid of experience we have discovered, in the properties of matter, modes of action, the effects of which had been regarded as supernatural efforts by the ages which have preceded us, but are at this moment contemplated as simple and natural consequences, of which we now understand the mechanism, the cause, and the manner of action. If the authority of great names is necessary to substantiate my positions, abundant evidence will be found in M. Gall's work, "Sur les fonctions du Cerveau;" Lawrence's Lectures on "Comparative Anatomy;" Morgagni, "De Sedibus et causis Morborum;" Spurzheim, in his various works; Clutterbuck, "On Fever."

The facts already brought forward sufficiently support my assertion, that insanity is a disease of the brain, and, indeed, were it necessary, innumerable are the proofs which might still be adduced. Having proved that the mental phenomena are dependent upon the brain for their manifestations, we may infer, that a disordered manifestation is a symptom of a diseased brain. To support this position, I shall quote a passage from the work of the illustrious Bayle, "Traité des Maladies du Cerveau," —"Les causes morales ne concourent pas moins puissaniment, que les causes physiques à la production de la méningite chronique, par l'action directe qu'elles exercent sur le cerveau, qui est l'instrument immediat de l'intelligence. Ces causes se rapportent presque toujours aux affections morales, el quelquefois à l'exercise des facultés intellectuelles." Principles founded upon observation, confirmed by experience, drawn from nature herself, have pointed out the organic parts by means of which the faculties of mind become apparent; but my observations upon these particulars shall be reserved for a future letter.

I shall now proceed to offer a few observations upon the objections urged against Dr. Epps's paper. Mr. Bennett does not coincide with the opinion of Dr. Epps, that mind comes from matter; he rejects, in toto, the doctrine of phrenology, upon which Dr. Epps's paper is founded, for several reasons—1stly, That the brain had been dissected many thousand years, and nothing known of its functions; 2ndly, That there was no perceptible difference between the brain of man and animals; 3dly, That the experiments of Flourens and Magendie had totally disproved it; 4thly, That the frog had no cerebellum.

To prove the absurdity of these objections there appears to be a very obvious method, and a most conclusive argument:—Does dissection alone discover function?—Can Mr. Bennett point out a nerve of motion from one of sensation? The cerebral surfaces are in proportion to the perfection of the intellectual faculties—(Vide Magendie, M. Gall, M. Desmoulins, and others.)—Rude experiments, performed upon the lower animals, cannot be considered as conclusive evidence; but if so, to a certain

extent, we may add to the innumerable proofs of the truth of the science of phrenology, those of Flourens and Magendie, which tend to prove, that the mechanical injuries of the cerebellum and lobes of the brain do not cause pain, or muscular contraction, but that pain ensues from injuries of the nerves, medulla oblongata, spinal chord, and corpora quadrigemina; hence M. Flourens comes to the conclusion,—"Les lobes cerebraux sont donc l'organe unique des sensations," as also Magendie;" We may say to Mr. Bennett, "Ex ore tuo contemnaberis."—That the frog possesses a cerebellum, dissection well proves, and for more information on this subject, vide Carus's Comparative Anatomy.

Dr. Barry, it appears, had been engaged in a very rude experiment upon a guinea-pig, to ascertain the functions of the cerebellum, and had, in his opinion, disproved the assertion, "that this part presides over the generative system."

Various wise saws and waggish opinions fell from other "esprit forts," at the Society, but some opinions are best treated with contempt; seriously to confute them is a labour I shall decline. That the cerebellum is the organ of l'amour physique, repeated proofs have, in my inquiries presented themselves; yet, to the innumerable facts already brought forward in the works of phrenologists, I may add one, as a still further corroboration:—The cerebellum, when stimulated by contiguous disease, as diseased cervical vertebræ, frequently produces *violent*, obstinate, and involuntary priapism. Of this phenomenon I have seen several cases; and, with a view of still further elucidating this subject, I have commenced a series of experiments upon the lower animals. It is not without astonishment I reflect that Mr. Bennett, at the expense of reason and judgment, should suffer himself to utter such absurdities. I am given to understand, Mr. B. has been elected demonstrator of anatomy to the London University. The idea that mind comes from matter is tinctured with materialism, and we may, perhaps, say for Mr. Bennett what Paterculus said for Cato, "Quia aliter esse non potui."

The reflections, as well as facts, which have preceeded, are, I think, abundantly sufficient to create the most powerful and interesting motives to determine all wise men to contemplate, instead of admitting unintelligible hypotheses fatal to a multitude of unhappy beings, to observe nature, deduce from experience, and no longer impose silence by saying—"The oracle has spoken."

I remain, Sir,

Your obedient Servant,

A Phrenologist.

Birmingham, May 16, 1828.

ABUSES IN THE ROYAL COLLEGE OF SURGEONS IN LONDON.

To the Editor of The Lancet.

Sir,—As I find I shall have occasion, in the prosecution of this investigation, to refer to some of my former letters, published under the signature of "Brutus," I shall, in future, continue to employ this cognomen, instead of that of

Virginius.

Letter II.

Sir,—After the sum granted by the House of Commons on the 13th of June, 1799, for the purchase of the Hunterian Museum, had been issued to the executors of Mr. Hunter, by the Lords Commissioners of His Majesty's Treasury, as we read in the returns furnished to that House, "By order of the Council of the Royal College of Surgeons in London," that House is informed, that the Museum itself was delivered to the care of the late Corporation of Surgeons. This Corporation, which should be mentioned when acts of monopoly and tyrannical oppression are recorded, died in less than twelve months afterwards, leaving issue the Royal College of Surgeons. It does not appear, however, that the old folks, although they contrived to enjoy and aggrandise themselves out of the rents, profits and proceeds, ever came into possession of the whole of the paternal estate, which descended to their successors, the present worthy family, on certain conditions. One of these, and the principal one too, has not yet been fulfilled.

The condition to which I allude is, that there should be an inventory, or catalogue, taken of that part of the estate, for the purchase of which the money was granted by the House of Commons, and issued by the said Lords Commissioners of his Majesty's Treasury; as I believe all royal and Parliamentary grants of money generally are. It was necessary, of course, that the House of Commons should be informed of this fact; and there is not the least doubt that, in due time, it will transmit a vote of thanks to the Council of the College for their information.

This part of the estate, the Museum, was removed from Mr. Hunter's house to the College, then, perhaps, without an appropriate front in Lincoln's Inn Fields, in the year 1806; and there were at that time two catalogues; one explanatory of the preparations in the gallery, the other of the morbid preparations. It remains for the College to explain, why there is not at present

any catalogue at all; and also the meaning of the following statement, which appears in the Report of the quarterly meeting of the Trustees of the Hunterian Museum, held on the 5th of August, 1826. The Board of Curators informs the Trustees, "That till the year 1816, *when the collection was removed to its present situation*, it was impossible for this Board to commence the preparation of a descriptive catalogue." I have not any doubt, that this official quibble, to give it the mildest appellation, was intended to deceive; for in the Refutation of Charges, &c., published by the College, may be found as follows; "On the completion of the Museum, and the admission of visitors, the want of a descriptive catalogue was soon felt and expressed; and the Board of Curators in the year 1813, prepared a printed syllabus to gratify scientific visitors." Whether or not "all the Curators were joint labourers in this great work," a little pamphlet of six or eight leaves, which your readers will not fail to observe, was produced at the end of seven years, may be found, perhaps, in the minutes of that Board, to which we are referred for a proof, that what was earnestly desired by the trustees of the Museum (a descriptive catalogue,) "has ever been a desideratum of great interest to the Board of Curators."

Let me examine this matter more attentively, in order to prevent mistakes; and, if possible, to gather the meaning out of so much confusion. The Museum is removed from Mr. Hunter's house in the year 1806; it is completed in the year 1813, and a syllabus prepared. There is not any difficulty in understanding the account thus far; but when we are afterwards informed, that the Museum was not removed to its present situation till the year 1816, we naturally inquire, In how many situations it has been, from the time it was removed from Mr. Hunter's house in 1806, to the year 1816? Again, if it were impossible to commence the preparation of a descriptive catalogue, till the last mentioned period, what have become of the two original catalogues? Burned! But when? Not before 1816; ergo, the College was for ten years employed in thinking about commencing the preparation of a descriptive catalogue; or, there was not any thinking at all about the matter. A clear account of things is very difficult on some occasions; and it does not appear to me to be one of the "standing orders" of the Council of the College.

But how rests the matter at the present time? At the quarterly meeting of the trustees before alluded to, held on Saturday the 5th day of August, 1826, they are informed, "That the conservator has commenced the descriptive catalogue of the morbid anatomy; that the description of the morbid preparations in spirit will be completed by the quarterly meeting of the trustees in February next; that the morbid preparations, not in spirit, will be described by the meeting of the trustees in August next; and that the descriptive catalogue of the preparations in the gallery will be completed *in the three years thence ensuing*." Truly, Sir, this is a wonderful description of College management and progression! and when the catalogue is produced, it will of course be quite new and unexpected. I hope all the Council will live to witness the delivery of this extraordinary joint-stock company's labour; but if any of them should happen to depart this life before that consummation is accomplished, they will certainly be remembered in the next ensuing Hunterian oration.

It is not my intention, Sir, to dwell upon those parts of the subject which are already fully known to the members of this College, and to the public, any longer than is necessary for the elucidation of the subjects contained in the Returns "by order of the Council," to the House of Commons. The past conduct of the College, however, with regard to this Museum, in not having prepared a descriptive catalogue of its contents, although it is on record, supported by the best authorities, that one might have been prepared in less than twelve months; locking up the collection for eight months of the year, certainly not for the gratification of scientific visitors, and in direct opposition to the conditions upon which the collection was entrusted to the care of the College; demonstrate very clearly, if no other proofs could be afforded, that those who have had the management of the College affairs, up to the present period, have not in this respect been worthy the confidence of his Majesty, his Parliament, or his people. And now, with that liberality which is the distinguishing mark of most corporate bodies, the Licentiates of the Royal College of Physicians in London, graduates in medicine of any of the Universities of the United Kingdom; and *regularly admitted* members of any of the *legally constituted* Colleges of Surgeons in the United Kingdom; are allowed the *extensive* privilege of admission to the Museum, on such days, and during such hours, as it shall be open for general exhibition, upon entering their names in the book provided for that purpose. These gentlemen, as well as the surgeons and assistant surgeons in the army, ordnance, navy, and East India Company's service, who, in addition to their names, must insert their respective ranks, will know how to appreciate the favour of being admitted to the Museum, when it is open for *general* exhibition, which, I suppose, means to every person.

A word or two on the days and hours of

admission to the Museum, will not, I consider, be out of place in this letter. Another of the conditions upon which the College received this collection, was, "That it should be open four hours in the forenoon, two days every week." The College, therefore, is not, perhaps, to blame for this limited admission; but I should advise the Council, before they again apply to Parliament, for the purpose of removing anatomical disabilities, to learn, that from twelve to four o'clock is not the forenoon; and that there is not any one act of the legislature more oppressive than their own arbitrary by-laws, standing orders, and regulations. First, burn these; then obtain permission of the trustees to open the Museum every day; and, lastly, apply to Parliament for assistance.

VIRGINIUS.

MEDICAL ASSISTANTS.

To the Editor of THE LANCET.

SIR,—As a general practitioner, sincerely desirous of raising the condition of assistants, I was much chagrined, on calling some little time past at the Lancet Office, to find so very few signatures attached to the list, you were so kind as to allow to be left there; and most unwillingly was I compelled to think, that if assistants were so negligent of their own interests, as not to wish to make an effort to emancipate themselves from their present miserable and degraded situation, it was quite impossible for other persons, however ardent they might be in their desires, to render them any assistance. Under this impression, I gave up the idea of stirring further in the affair. A casual interview yesterday with the writer of one of the former letters on the subject, which appeared in your truly valuable publication, leads me to imagine I was wrong in the opinion I then formed. I find from him, that many more names would have been signed, had not an idea prevailed, that the original mover had abandoned the cause; and it seems many imagined the list at Callow and Wilson's, and that at your office, were left by different persons. Feeling convinced, Sir, there are a number of spirited and well-informed young men, assistants, who would gladly join in any scheme by which their respectability, and, consequently, their comfort, might be increased, (most assuredly it will not be so before needed,) I now take the liberty of throwing myself on your generosity for an insertion of this letter, and that by some remarks of your own, you will call the attention of those interested, to the subject of its contents. I would suggest, that those who have already signed the list, should meet together, for which purpose I shall be most happy to offer the use of my house, (enclosed you have my card,) we could then consider the propriety of a public meeting. Let there be but a beginning made, and I have no doubt, with your able assistance, we shall find plenty of supporters; and that before five years, an assistant, instead of being as he now is, little better paid than a livery servant, and sometimes less thought of, will hold that rank in society his education entitles him to, and his services so richly deserve. You have already, Sir, done much good for the profession; and I rest confident, that when so large a field is opened for your benevolent exertions, as that afforded by the unfortunate condition of assistants generally, you will not cease to give your powerful aid, until you have attained the much-wished for, and long necessary reform. You are at liberty to give my address to any gentleman desiring to aid the cause.*

I have the honour to be, Sir,
Your obedient servant,
L.

Upper Seymour Street, Portman Square,
May 18.

AMPUTATION OF THE JAW.

To the Editor of THE LANCET.

SIR,—It happened that THE LANCET, No. 242, did not come to my hands till this day, when a friend pointed out to me your account of a paper of mine, on amputation of the jaw, read at the Medico Chirurgical Society on April 8th. I request the favour of you to allow me to explain some errors therein.

On the three preceding meetings (after my paper was delivered) I had made a point of being present, but the unusual length of Mr. Brodie's valuable communication on injuries of the head, delayed the reading of mine till I was unable to attend. A circumstance which I much regretted; for, independent of the wish to afford explanation, if required, I hoped to derive much benefit from the discussion likely to arise on so interesting a subject.

The operation was performed by Dr. Mayor of Lausanne (not Berne) and the

* The address of this gentleman is left at our Office.

recovery took place under every disadvantage. Severe small-pox, ten days after the operation, and a formidable attack of erysipelas at the end of a fortnight.

The narrative was drawn up from memory several months after the occurrence, and without any communication with Dr. Mayor; but after an attentive reconsideration of the case, it is clear that I was mistaken in supposing the whole of the parotid to have been removed. It is probable that I was deceived by the granulated appearance of the fatty substance lying over and intermingled with it, and by one of those diseased lymphatic glands which are sometimes found imbedded in the parotid itself. Parts, however, are so altered and so pushed out of their natural position, by diseases of this character, that a by-stander cannot easily recognise them. As I was not the operator, this error was not of much importance; my aid being confined to the tying of arteries.

With respect to the unnecessary torture, supposed to have been inflicted on the patient, I confidently rely on the skill and judgment of the operator, whose talents I have had many opportunities of witnessing on other occasions; but in the conduct of an operation so recently introduced, and of which so very few cases are on record, every circumstance cannot suggest itself at once. The carotid had been tied in all the cases then known, either to Dr. Mayor or myself. It is possible that it may not be always necessary, but looking to the enormous increase of size which blood-vessels attain in the vicinity of such a disease, it never occurred to either of us, that the precaution could be safely omitted. At any rate it is scarcely possible that the best surgeon, or anatomist, can form an opinion of its necessity without seeing the case.

I am, Sir,
Your obedient servant,
A. L. WIGAN.

Ulster Place, 28th May, 1828.

LITHOTOMY IN THE HORSE.

To the Editor of THE LANCET.

SIR,—I perceive from Mr. Lucas's letter in your Journal, of the 12th April last, that he is not aware of the operation of lithotomy in the horse having been previously performed with success. For his information, and encouraged by your desire to be possessed of the particulars of the operation, I beg leave to transmit the following account of a case in which I operated successfully some years ago; it was published at the solicitation of the late celebrated Mr. James White, in the London Medical and Physical Journal, for October 1824.* About the same period an account of it was also given in the Sporting Magazine, and subsequently it has been quoted by Mr. Percival, in the 3d vol. of his valuable lectures. I do not take credit to myself as the first operator in a case of this kind, for Lafosse, in his "Dictionnaire d'Hippiatrique," published in 1775, mentions one wherein he succeeded in cutting for the stone.

But his mode of operating was complicated, as he made two lateral incisions in the neck of the bladder. Whereas by the mode I pursued the whole was simplified, and the stone very readily extracted.

I am, Sir,
Your most obedient servant,
W. MOGFORD, V. S.

Guernsey, 17th May, 1828.

"*Case of Lithotomy successfully performed on a Horse, communicated by* JAMES WHITE, Esq. Veterinary Surgeon."

"*To the Editors of the* LONDON MEDICAL AND PHYSICAL JOURNAL."

"GENTLEMEN,—The following account of the extraction of a stone from a horse's bladder, has been communicated to me by Mr. W. Mogford, who was some years ago my pupil and assistant, and is now a respectable practitioner at North Lew, near Okehampton, Devon. Should you think it worth the notice of your readers, I will thank you to insert it in your valuable Journal.

I am, gentlemen,
Your obedient servant,
JAMES WHITE."

Wells, Somerset, Aug. 9th, 1824.

"The horse is the property of James Veal, Esq., near Hatherleigh, Devon. When taken up to be broke, he was found to be very restive, kicking off most of those who attempted to ride him; in consequence of this he received very rough usage; and has since been ridden rather hard. When Mr. Mogford was desired to attend him, he observed a peculiar stiffness in the movement of the hind legs; urine of a high colour and pungent smell, and a dribbling of urine from the penis for some time after

* It is useless to print papers in some journals. This operation, although performed, and pretended to be published four years since, is scarcely known to a member of the profession.—ED. L.

staling; pulse between 70 and 80, and hard. By bleeding freely, clysters, fomenting and embrocating the loins, and a week's rest, he appeared sufficiently recovered to be sent to grass. He soon leaped over the gate of the field, and, crossing the country, got back to some pasture where he had been usually kept. This exertion caused a return of his complaint, and Mr. Mogford was again desired to attend him. He found him in the same state as before described. Wishing to examine the bladder, he introduced his hand into the rectum for that purpose, and immediately felt a hard substance, which appeared to him to be a stone in the bladder. He communicated the circumstance to Mr. Fisher, surgeon, of Hatherleigh, who could not be persuaded that it was a stone, until he had made the examination himself, when he also felt it distinctly. Mr. Mogford then proceeded to the operation in the following manner.

"Having drawn out the penis from the sheath, or prepuce, he passed a rod of whale-bone up the urethra, until the end of it could be felt in the perineum. He then cut down upon the end of the rod, and through the opening thus made in the urethra he introduced a director, and with a probe-pointed bistoury continued the opening as far as the left side of the anus. He then introduced his right hand into the rectum, and the two fore fingers of his left hand into the bladder, and, without any difficulty, pushed the stone against the middle finger, by which he guided it to the neck of the bladder, and then easily forced it out through the opening in the urethra. The stone weighed rather more than four and a half ounces. Some parts of the stone appeared to have been broken off and left in the bladder; these were easily removed by means of a piece of soft sponge tied to a whalebone probe, and some water. The wound quickly healed, except a small orifice, through which a part of the urine still passes; but the horse has worked hard since, and suffered no inconvenience from it. Mr. Mogford has no doubt that a stone of seven or eight ounces might be thus extracted."

DISTRIBUTION OF PRIZES AT ST. THOMAS'S HOSPITAL.

To the Editor of THE LANCET.

SIR,—An error, unintentional no doubt, having appeared in your last Number; an endeavour, on my part, to correct it, will not, I hope, be attributed to vanity. You there state that "the junior demonstrator's prize was awarded to Mr. Ferron;" as I am the individual meant, though my name is incorrectly spelt, I must beg you will correct it in an early Number.

You also state that it has been since determined to present Messrs. Davis and Travers with a set of books *equal* to the prize. Now, I can only say, that immediately the prize was adjudged to me by lot, Mr. South said he should present Messrs. Davis and Travers with some mark of his approbation, though '*certainly not equal*' to the prize. I cannot allow this opportunity to pass without stating the pleasure I feel in having been a fellow-candidate with two such industrious, amiable and gentlemanly young men as Messrs. Davis and Travers; and I attribute the late successful result, on my part, rather to a gift of fortune than to any superiority in the examination. I have the honour to remain,

Yours faithfully,

W. INGLIS FERRAR.

TO CORRESPONDENTS.

Communications have been received from Mr. Orum—Mr. Nicholson—Dr. L.—Dr. Reece—O.—Mr. Henry Pout—Dr. Walden—Mr. R. Payne.

"Scribbler" is no scribbler; he writes well. His Letter on the Infirmaries, if possible, shall be published next week; his first letter must be authenticated, or it cannot be inserted.

"O." has our thanks.

As "C." authenticates his report, it shall be inserted.

"An Unavoidable" is informed, that we do not attack individuals on anonymous testimony.

We should be glad to receive a Letter from Dr. L. of L——n.

WORKS PUBLISHED DURING THE WEEK.

Arnott's Physics. 8vo. Third Edition. 21s.

Mr. Cormac on Stammering. 5s. 6d.

White on the Rectum. New Edition.

Thomas's Practice of Physic. Ninth Edit. Improved and enlarged.

Art of Invigorating and Prolonging Life. New Edition.

Alcock on the Hospitals of Paris. 3s. 6d.

Edinburgh Medical and Chirurgical Transactions. Vol. III. pt. 1. 8vo. 12s.

Smith's Compendious Flora Britannica. New Edition.